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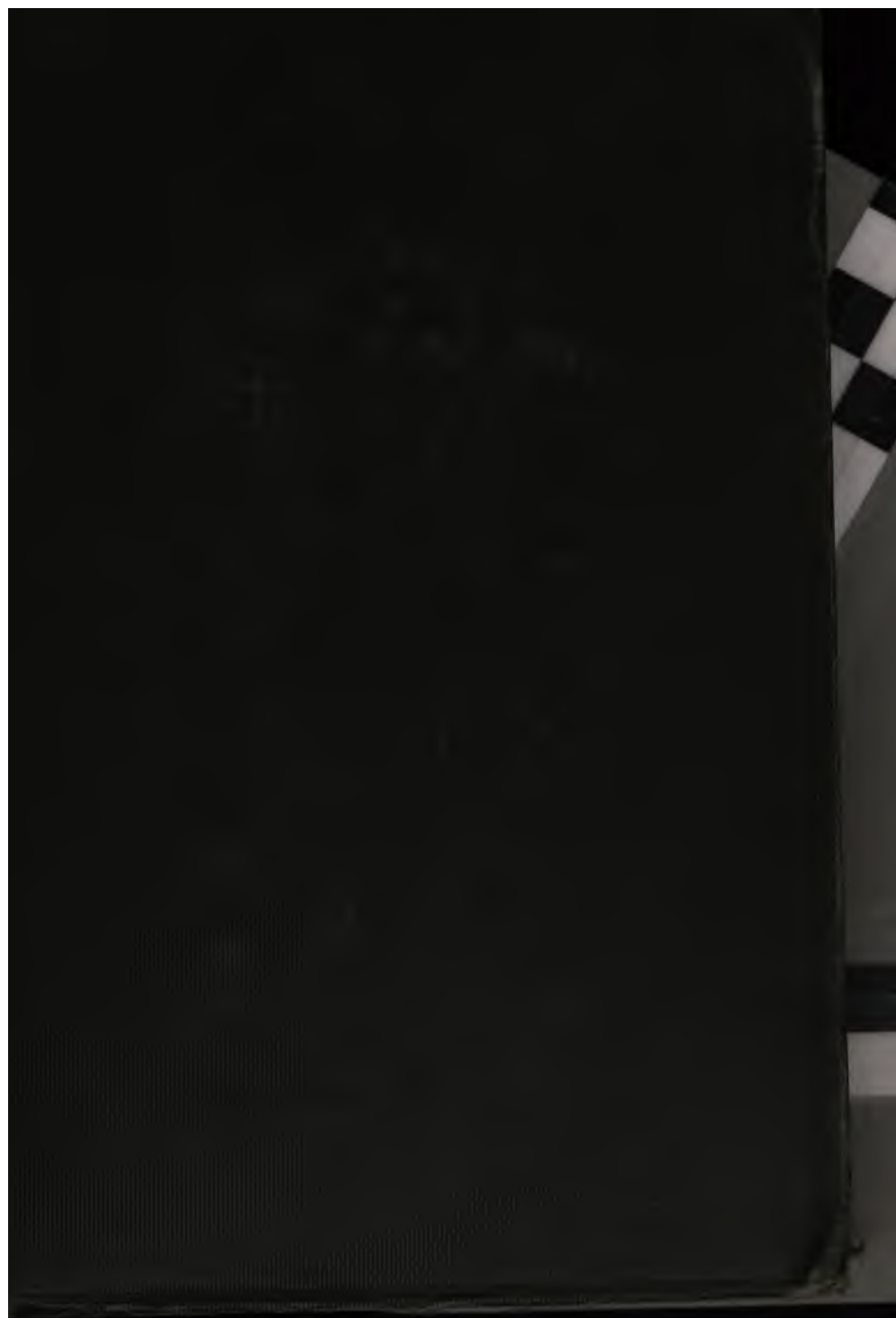
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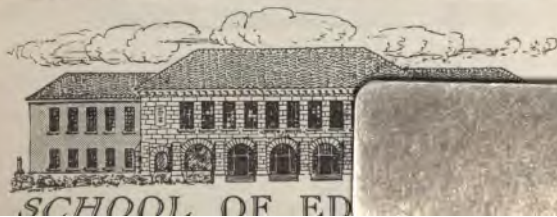
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AMERICAN EDUCATION SERIES
GEORGE DRAYTON STRAYER, GENERAL EDITOR

THE CLASSROOM TEACHER

AT WORK IN AMERICAN SCHOOLS

BY

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NEW YORK CINCINNATI CHICAGO
 BOSTON ATLANTA

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CLASSROOM TEACHER—STRAYER-ENGELHARDT

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AMERICAN EDUCATION SERIES

GENERAL INTRODUCTION

THE purpose of a professional book is the improvement of the practice of those who work in the field which it explores. The books to be issued in the American Education Series will, in every case, seek to meet this standard. The ground to be covered extends from the work of a teacher in a one-room rural school to that of a superintendent of schools in a large city or a commissioner of education in a great state. Scientific fields which contribute most largely to professional practice will be considered, as will also special problems connected with teaching practice. The history and philosophy of education will be interpreted, since they enable the teacher to understand better our modern educational practice and to work more efficiently because of his added understanding of the significance of his work as related to the society which he serves.

There is no reason to classify books as of higher or lower degree in a professional series. The teaching of beginning reading, the standards to be maintained in erecting school buildings and in their equipment, the organization of the supervisory and administrative staff, the control of public schools by a board of education that operates under a state law — all are important in the equipment of a teacher charged with the education of a child in the first grade. If the school system is weak in any of these particulars,

the education of the children in this grade may be interfered with.

Wherever problems exist there is a demand for books based upon scientific inquiry and professional insight. This series will be developed in relation to the more important problems as they are to-day recognized or as they emerge, and will be written by those who have unusual skill in treating concretely these professional problems. No book will be issued merely because other books have appeared under certain titles which seem to round out a comprehensive treatment of the field of education. Any book, in order to be included, must have furnished a satisfactory answer to the question, Will this book increase the efficiency of some group of workers in the field of education? Volumes in the series will appear from time to time as it is possible to meet these proposed standards.

GEORGE D. STRAYER

THE CLASSROOM TEACHER

AUTHORS' INTRODUCTION

IN the past books for teachers have treated primarily of methods of teaching, classroom management, and courses of study. There seems to have been an assumption that teachers were not interested in the organization of the school system or in the methods employed by those who supervised or administered the schools. This book treats of the organization and administration of public education, as well as of the technique employed by the teacher in his daily work. There is an assumption throughout the volume that teachers will work to best advantage only when they understand the organization of the school system in which they are employed and the reasons for the administrative procedure in which they are asked to coöperate.

As the profession of teaching develops we must expect more and more of coöperation between administrators and teachers. The professional insight and skill of the teacher in the classroom should be made available in determining matters of administrative policy. For example, the teachers' council, whose membership consists of elected representatives of different groups within the school system, promises well as one method of securing teacher-participation.

If teachers are to work intelligently in coöperation with boards of education and superintendents of schools, they must know more about our current practice in the field

of educational administration. This volume furnishes to teachers the knowledge necessary for such intelligent co-operation.

Whether or not a superintendent of schools believes in institutionalizing the participation of teachers in the development of administrative and supervisory policies, he would nevertheless be glad to have them understand the plans of work in which they are involved. The chapters dealing with records and reports, the organization of public education, the classification and progress of children, the measurement of the achievements of children, the health of school children, and extra-curricula activities make possible an intelligent and sympathetic coöperation with the plans of the administrator. The treatment of the purpose of education in a democratic society, the technique of teaching, teaching children to study, class organization, and training for citizenship, while they deal more intimately with the detail of the teacher's everyday work, are made most significant only as they are related to the principles of administration which control. It may confidently be predicted that courses for teachers in training will in the future deal with the problems of administration, as well as with the technique of teaching, and the problems of class management. The chapters which are included in this book will be found valuable for teachers who are receiving their initial training in normal schools or colleges, and also for those whose professional training is continued through the work of reading circles and teachers' courses in the school systems in which they are employed.

GEORGE D. STRAYER
N. L. ENGELHARDT

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THE CLASSROOM TEACHER

CHAPTER I

EDUCATION IN A DEMOCRATIC SOCIETY

UNIVERSAL public education is the foundation upon which democracy is built. In an autocracy, or in a society organized upon the basis of a ruling class, education may be reserved for the few ; but in a democracy the welfare of every member of the group depends upon the intelligence of each. Free schools for the education of all of the members of a democratic society are quite as fundamental to the continuance and development of democracy as is the idea of universal suffrage or of equality before the law.

The aim of education. — The schools of a democracy are organized to provide an opportunity for individual growth and development to the end that each may live a happy and productive life. They must concern themselves, as well, with the development of ideals and purposes which will enable the individual to find his greatest good in service for the group. We shall always value the individual in a democratic society. He will always be worth our best effort in order that he may realize in his life the most that is possible. We must more and more, however, seek to establish the idea of responsibility and to develop the

practice of coöperative endeavor for all who are to be thought of as worthy citizens of our society.

Our schools, in the past, have concerned themselves mainly with training boys and girls in the tools of investigation and inquiry, reading, writing, and arithmetic, and in supplying them with that knowledge which would enable them to appreciate in some measure the world of things and the world of men in which they live. We shall always find it necessary to teach the "three R's" and to give the information which is provided in science, history, literature, and the fine arts. As we come to recognize more clearly the function of education in a democracy, we shall stress more and more that education which will explain the meaning and purposes of a democratic society and which will give larger opportunity for participation in the duties of citizenship, even while boys and girls are still enrolled in our schools.

Extending the period of education. — We have during the past seventy-five years developed a system of free public education available and compulsory for most boys and girls until fourteen. If we recognize the responsibility of the school for the development of intelligent members of a democratic society, the period of education will have to be extended until at least eighteen years of age. Boys and girls under fourteen years of age do not understand and cannot appreciate the purposes and ideals of our democratic society. They cannot even appreciate adequately the organization of our government. There are groups who have little appreciation of the meaning of democracy, who have always exploited the ignorant and untrained for their own selfish ends. The schools must accept an

obligation for the continued education of all boys and girls during the period of young manhood and young womanhood.

This continued education beyond the present compulsory school age need not necessarily be full-time education. It is possible to organize such schools during daylight hours for those who work. In these schools, for those who are working on part-time, there should be opportunities for growth in appreciation of literature, music, science, and the like, as well as for a study of our government and institutions and an organized participation in social life.

In addition to this type of education, which looks in the direction of intelligent citizenship, there can be offered as well that type of theoretical training which will make for greater efficiency in the occupations in which these boys and girls are engaged. It is not too much to expect that compulsory full-time education will be provided for all boys and girls up to sixteen years of age within this generation. It is certainly not too little to demand that even now a minimum of at least eight hours of education a week, in daylight hours, be provided for boys and girls until eighteen years of age.

Education for citizenship. — Our schools are weak at the present time in the opportunities which are offered for the study which might lead to an appreciation of the duties and obligations of citizenship and in the opportunity which is provided for boys and girls and for young men and young women to accept the obligations of citizenship. The greatest opportunity which the schools ever had came during the Great War, and the best preparation for citizenship that children in our schools have ever had was provided by the war activities in which they became engaged.

To save materials and labor in order that they might be available for our government in the winning of the war was the duty of all citizens. The children who were careful of their clothing, and who refrained from unnecessary indulgences in candy, soda water, and the like, were citizens in the best sense of the word. The work done by boys and girls in the Junior Red Cross for the war work fund in the selling of War Savings Stamps and Liberty Bonds was work which was done in the light of the duty which all citizens felt in the time of the great crisis. In times of peace, obligations to the local community, to the state, and to the nation should be made clear to children, and opportunities should be provided for them to meet these tests of good citizenship.

The professional obligations of teachers. — American teachers need to think not only of their obligations to serve the community, but also of the strength or weakness of the scheme of public education which has been provided. We are accustomed to think of the leaders in commerce, in manufacture, in law and in medicine, in farming and in engineering, as responsible for the development of our community life in the fields which they represent. It is time that all who teach consider seriously their obligations to the community and the possibilities for the development of the institution in which they work.

The successes and failures of American education. — The Great War brought into bold relief both the success and the failure of American public education. Our schools were in some measure responsible for the splendid spirit in which the selective service act was received by our people. To the great majority of Americans compulsory

military service for the sake of perpetuating democracy in our own land and making it possible for other people to enjoy the benefits of this type of social organization was a duty to be accepted no less certainly than those imposed by the commonly accepted moral code. Those who had had unusual educational opportunity proved themselves not only patriotic, but also capable in undertaking the control and direction of military affairs, both in the field and in the organization of our economic life in support of our armies. Never have a people more whole-heartedly devoted themselves to the realization of a high ideal.

Americanization of foreigners. — The weakness of our scheme of public education appeared equally clear in the emergency. We became aware for the first time of the danger which lies in the thirteen million people of foreign birth and traditions, who did not understand our purposes, and who were, in some cases, openly antagonistic to them. We discovered, what we might have known even before the war, that there were in the United States thousands of schools in which children were taught in a foreign tongue and in which the ideals and purposes of governments and peoples antagonistic to our democracy were set forth. In taking account of stock, we need not blame these peoples who have come to us. Their failure to understand our purposes has, in considerable measure, been due to a lack of opportunity. We have been too well satisfied with the Americanization of the children and too little concerned with the education of their older brothers and sisters and of their fathers and mothers. We have been so averse to interfering with schools organized under private auspices that we have allowed those schools which are un-American

to grow up. The program ahead calls for the development of schools for adult foreigners as a part of our system of education. We should appreciate the elements of strength in the culture of those who have come to us from other lands, and attempt to have this strength contribute to the development of our democratic ideals. At the same time we should enforce upon all schools the requirement that the language of instruction during the elementary school period be English, — the only language in which we may hope to have handed down to boys and girls the ideals and purposes of our democratic society.

Removal of illiteracy. — The army discovered that an illiterate was not a good soldier. In any army a soldier is under the direction of his officers continuously. Not only is his work done at the command of a superior, but every detail of his life is worked out for him. If in this type of situation an illiterate does not make good, how much may we expect of the illiterate citizen in a democratic society? As a citizen the illiterate is a ruler, and not simply one who obeys orders. To the group of seven million illiterates over ten years of age who were willing to confess themselves illiterate at the time of our last census must be added the other millions who do not commonly read or understand the discussions upon which hang the destinies of our country. These are they who are exploited by the politician or the demagogue who works not for the interests of our country, but for the interests of a machine or of his own pocketbook. For the removal of illiteracy, schools of a new type must be developed. Opportunities must be offered and a requirement imposed for those who would accept the duties of citizenship.

A program of physical education needed. — In the first national army draft in 1917, when the physical standards were kept high, thirty-four per cent of the men between twenty-one and thirty-one years of age were found unfit for general military service. This is an indictment directly of the society in which these men had grown to maturity, and indirectly of the health service which has been offered in our public school system. It has been discovered that physical education and health service can be administered most economically and most efficiently in connection with the public schools. In some communities the work has been well done. For the most part, however, we have been too well satisfied with the recording of physical defects. It is a common practice to write on a card the defects found in the children who are examined, and then, after giving advice, which is often unheeded, to file the card until a year later, when upon reëxamination the card and the child, with all of his defects, reappear. Physical examination furnishes a necessary basis for health service. The best type of physical examination has been developed in those communities in which doctors devote full time to this service, and have coöperating with them nurses who work in the homes as well as in the schools. In addition to the physical examination and the advice given by the nurse, any adequate scheme of health service must provide free dental, medical, and surgical clinics. We know definitely of the physical inefficiency of those who neglect their teeth, of the danger of neglect in the case of children's ailments, and of the opportunity for normal physical growth and development which is provided through minor surgical operations. Society cannot afford to have boys and girls

grow into manhood and womanhood physically inefficient if it is possible to remove the defect or to give the opportunity for normal development.

The remedial work to be done is only one aspect of the program for the development of physically efficient men and women. Opportunities for play and for work must be provided for all boys and girls and for young men and young women. More playgrounds, gymnasiums, gardens, and shops are needed in American schools. In our cities the longer school day, with recreation and work with the hands, added to the program now commonly carried on in the classroom, will make possible the development of physically efficient men and women. The greatest source of wealth in any community is to be found in the normal physical development of boys and girls. The individual training which is provided in our schools can mean little without a sound basis in physical well-being.

The preparation and compensation of teachers. — Those who teach must, of necessity, be interested in their fellow workers in the field of public education. Those who are adequately prepared for service in this field must sometimes grow discouraged in the contemplation of the large group of those engaged in teaching who have no special preparation for this most important social service. In 1918-19, approximately a fourth of all the children of the United States were being taught by teachers who had less than a high-school education, and who had very little or no professional training. We have been satisfied in the United States with a lower requirement and less training for the teachers in our schools than prevails in any other great nation.

The remedy is not far to seek. We shall have to put more money into our public schools, and especially in the salaries of teachers, if we are to have adequately trained teachers for American boys and girls. In 1919 the average salary for teachers in the United States was less than six hundred dollars a year. During the year 1919 an inquiry in cities of over ten thousand inhabitants revealed the fact that the average salary in these communities was eight hundred and sixteen dollars. In either case the salary was not sufficient to support one engaged in the teaching profession. On account of the meager reward that is offered, men and women with a minimum of education are the only persons who can be secured for teaching positions. Not very long ago the Department of the Interior issued a bulletin showing that thousands of schools had to disband during the school year because teachers with even the meager requirements specified by law were not available for them. In recent years the enrollments of training schools for teachers have dropped because of the lack of opportunity in the teaching profession. The issue before our profession and before all who wish well for our country is best expressed by asking the question, "What kind of teachers do we want for American boys and girls?" There can be but one answer in a democratic society. We want the choicest of our young men and young women to engage in this profession and to render this most important service. In order to secure these recruits for the teaching profession, salaries must be greatly increased.

A minimum salary of twelve hundred dollars per year throughout the United States would do more for democracy than the same amount of money spent for any other pur-

pose. The United States is wealthy enough to provide the one half billion dollars that it would require to bring about this desirable result. Within the year 1918-19, it was found necessary to spend approximately double that amount in the increase of wages of railroad employees in order to keep our railroads running to a fair degree of efficiency. The first increase in the salary of railway employees imposed a tax, in terms of freight and passenger rates, of four hundred and seventy-five million dollars upon the American people. An equal amount would increase immeasurably the efficiency of our schools. We need not feel that we are pleading our own cause when we demand adequate salaries for American teachers.

National support for education. — Any plan for the development of American public education must take account of the fact that wealth is most unequally distributed throughout the nation. It is possible to find a state in which there is six times as much wealth back of the education of every child between six and fourteen years of age as is available in another state. The logic of the situation runs somewhat as follows: We believe in a democracy; we are not an aggregation of forty-eight independent democracies, but, rather, a great nation — the United States. Democracy promises an equality of educational opportunities and guarantees that the burden of providing this service shall rest with equal weight upon all who pay taxes. There is very great inequality of educational opportunities to-day. One boy goes to school in a hovel taught by a teacher relatively uneducated and without opportunity for professional training, without books, shops, apparatus, or supplies, while another boy goes to school in a marble

palace with a well-paid, splendidly educated, professionally trained teacher, with gymnasium, shops, and libraries available for his use. Half of our population live in the country, villages, and small towns. The children in these communities will rule the nation no less certainly than the children in our larger cities. Potentially they promise much for the perpetuation and development of our democracy. We have neglected them. The realization of the promise of democracy will come to pass when we accept the fact that the equalization of educational opportunities can be provided only when the wealth of the nation is put back of the education of the children of the nation.

If we seek to establish this democratic system of education, it is the opinion of the writers that we shall need to distribute large sums of money appropriated by our national government. It is their further opinion that we shall need in this field, as in the case of commerce, labor, and agriculture, and the rest, a representative in the President's cabinet. If once we admit the fact that it is the business of the nation to provide education for all of the children, we must then acknowledge this function by the establishment of a branch of the government coördinate with those other departments now represented in the President's cabinet. We are the only nation in the world, among those associated with the overthrow of autocracy and for the establishment of democracy, which has no Ministry of Education. We needed the experience of the war to make us conscious of the national obligation to provide education. We have in other respects outgrown our neighborhood conceptions of the function of government. With the problems of the removal of illiteracy, the Ameri-

canization of the immigrant, and the providing of adequate physical education and health service before us, who will deny that we must have national action if the situation is to be met?

In time of peace, no less than in time of war, mental efficiency and physical efficiency determine the success of the nation, and the place of the nation in the world in which we live determines the opportunity of the individual. A message that Commissioner Finley, of the New York State Department of Education, brought back from France during the war should inspire us in these days of peace: "Do not let the needs of the hour, however demanding, or its burdens, however heavy, or its perils, however heart-breaking, make you unmindful of the defense of to-morrow, of those disciplines through which an individual may have freedom, through which an efficient democracy is possible, through which the institutions of civilization can be perpetuated and strengthened. Conserve, endure taxation and privation, suffer and sacrifice, to assure those whom you have brought into the world that it shall be not only a safe but also a happy place for them."

QUESTIONS

1. To what degree is it desirable in a democracy to limit the free opportunities for educational advancement?
2. Why are free schools for the education of all necessary for the maintenance of a democracy?
3. Do free schools mean equality of opportunity for all children?
4. Under the systems of taxation and apportionment of school funds prevailing in your state, is it possible for all children to secure equal opportunities in education?

5. In what ways does the conduct of schools in a foreign language affect a democratic state?

6. What evidence can you present to show that policies of public education in the United States largely determined our success in the World War?

7. What causes determined the publication of the multitude of foreign newspapers in the United States before the war? To what degree was this a failure of public education?

8. What is the state's responsibility to the immigrant in respect to: (a) his ability to use our language, (b) his knowledge of our customs, (c) his health, (d) the education of his children?

9. What advantages accrue to the individual child from a national program of education?

10. What advantages are to be gained for education in establishing a national minimum salary for teachers at \$1200 a year?

11. When is a man illiterate? To what degree must he be educated before he may be ranked as a literate?

12. To what degree should the public schools have been considered inefficient when thirty-four per cent of all the male adults in the United States were found unfit for military service?

13. What great weaknesses exist in public education in the United States which need immediate remedial attention?

14. What program of supervision is desirable in every city or community that will insure (a) that every child is taught in English, (b) that every child may become an American citizen, (c) that every child may secure a maximum of educational advantages?

15. To what extent is compulsory attendance at school justifiable in a democracy?

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Dewey, Education and Democracy.
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CHAPTER II

THE ORGANIZATION OF PUBLIC EDUCATION

A TEACHER'S contribution to the common good depends, in considerable measure, upon the organization in which he works. Every teacher is a member of an organization as large as the state in which he is employed. The organization of the school in which he works is provided for by the state. Its abandonment or its consolidation with other schools may be brought about only under conditions which have been determined by the state legislature. The preparation which the teacher must have, and the type of contract entered into with the local board of education, in some states with a specification concerning the minimum salary, are determined by law. The building in which the teacher works, its heating, lighting, and ventilation are, in many states, rigidly controlled by law or by rules of a state board which have the effect of law. The number of children in a class, the organization of special classes for defective or delinquent children, the subjects to be taught, the number of days that schools shall be kept open, and even the presence of children in the classroom are, in varying degrees, determined by law and enforced by the state authority.

Teachers need to understand the organization of the school system in which they work. They ought to be so well informed that they will always be found upon the side

of progressive legislation. They cannot appreciate the requirements which seem to be imposed upon them except as they understand the necessity for the enactment of laws or the promulgating of rules and regulations which have universal application. In many instances teachers have ranged themselves with the opponents of sound educational legislation because of their failure to understand the significance of the organization of the school system in which they were at work.

State and local control. — The local administrative unit is never the only authority in the administration of public education in the United States. The city board of education controls education within the city school district under charter provisions and state laws which are enacted by the state legislature. It is true that special legislation for cities of different classes often provides for a form of administration, a type of organization, or a method of procedure which are found only in a single city or in a small group of cities within a state. It will be found, however, upon examination that certain fundamental provisions for the state law apply even in those communities enjoying a large degree of autonomy. The limit of taxation, the relation of bond issues to taxable wealth, the relation of the school administration to the general municipal administration, the control of school attendance, and the like, are commonly determined by state law. There is often need for a more thoroughgoing appreciation of these conditions imposed by the state upon the local education authority by teachers who would work for the improvement of the local school system. In most cases a true professional spirit would demand that teachers in urban

communities join with those who are at work in the rural and village communities for the enactment of legislation that would make for the equalization of educational opportunity throughout the state.

State support of education. — Every teacher should have some knowledge of the method of distribution of state moneys which are used in support of public education. Money distributed by the state to the local education authorities comes commonly from two sources: first, permanent school funds, or, second, from state taxation in support of education. In either case the purpose of the funds distributed is to equalize the educational opportunities enjoyed by children and to insure an equality of burden for all taxpayers. In a majority of the states this ideal is very imperfectly realized at the present time. The difficulty heretofore has been the desire upon the part of legislators to arrive at some single basis of distribution which appears on its face to be equitable. This commonly results in the choice of a basis of distribution which takes account of the number of pupils in each unit of administration of school age, or the number of children in school. Neither of these bases takes account of the fact that in the urban communities more children can be placed, without hardship to themselves or to the teacher, in a single classroom than is possible in the sparsely settled rural communities. Neither of them takes account of the other fact that in the majority of the states the urban community has available for taxation greater wealth per pupil than is to be found in the rural areas. If a single basis for distributing school funds is to be used, one of the most highly satisfactory would be that of the number of

teachers employed. A per teacher grant of money from the state would at least insure as much per classroom unit to a school of ten pupils in a rural school as was paid by the state to a class of thirty-five pupils in a city school. The per teacher basis has the further validity of being most directly related to the largest important single cost involved in furnishing education — the teacher's salary. The salaries of teachers will ordinarily equal from sixty-five to eighty per cent of the school budget. As the situation is at present, rural school teachers are frequently poorly paid and rural school children have a minimum of educational opportunity provided for them.

The county unit of administration. — The distribution of the state's funds in support of education can be made the means of equalizing educational opportunity very much more significantly when the local unit of administration is the county rather than the township or school district. School districts in the same township, and townships in the same county, will often show a very great variation in the taxable wealth per pupil available for school purposes. It is not uncommon to find school districts within a few miles of each other, in which the wealth per pupil will vary so as to show from five to ten times as great resources in one community as there are in another. Like variations occur among townships within the same county. If the county is the unit for local taxation, as well as for the distribution of state funds, the county board of education becomes responsible for the equalization of educational opportunity throughout that area. Discrepancies will still be found among the several counties of the state, but these can be handled very much more adequately

when reduced in number to the number of counties in the state than is possible under the system of administration which multiplies by scores and hundreds the special taxing and administrative units.

There are other reasons for making the county the unit for educational organization and administration. Outside of the urban districts it is not possible for the smaller communities, or for rural school districts, to employ an adequate supervisory staff. With the county organized as the unit for administration, the county board of education may select a superintendent of schools and at least one assistant superintendent or supervisor for every hundred teachers employed in the county. In addition to this general supervisory staff, through the consolidation of schools and the organization of regional high schools throughout the county, it will become possible to employ competent principals for the larger schools of the county. The problems of the consolidation of schools, of the location of high schools, of the development of courses of study with special reference to the needs of rural communities, of the organization of an adequate supervisory program, all depend in large measure upon this larger administrative unit.

City school administration and city government. — Where the city is the local unit of administration one of the principles of greatest importance to teachers and to the development of an adequate system of education is that of the independence of the school administration from the general city government. Even where the county is, for the greater part of the area, the unit of administration, cities maintaining an adequate supervisory staff may,

to advantage, operate as an independent city school district. The city board of education should have the right, within certain limits, to levy taxes in support of education and should have complete control of all moneys, whether raised by local taxation or received from state funds. To give the control of school funds to a local city government is to hamper the board of education in the development of the school system of the city. To give to the local board of estimate and apportionment the control of school moneys will often result in an attempt to divert school funds to other purposes. The rewards to the politician or to the political machine are very much more apparent through the spending of money in other city departments than in the field of education. As much as we might expect a protest from parents and interested citizens over the curtailment of educational opportunity, the fact remains that the city administrations in many American municipalities have discovered over a long period of years that they can, with comparative immunity, neglect the best interests of the schools. On the whole, those cities in which the board of education has enjoyed fiscal independence, has been able to levy taxes, and to administer the funds available for education have made greater progress and maintained higher standards of public education than are to be found in the communities working under the other form of control.

State control of education. — Education is a function of the state and not primarily a function which can be turned over to the municipality. The state continues to control education even where the largest degree of autonomy is granted to cities. The administrative machinery

set up for the development of a public school system in the city — the board of education — is created by state law to carry out the purposes of the state in providing education for all of its children. Whatever may be the argument for the unification of municipal government through the commission or city manager plan, the argument is still stronger for the continuance of the control of public education by the independent school board.

Standards for school buildings. — The type of building in which teachers work should be placed under state control. For the most part in the United States to-day some requirement is imposed upon rural communities. There are commonly provisions concerning the lighting, heating, and equipment of school buildings, and very frequently some requirement with respect to school grounds. In some of the more progressive states more elaborate requirements are imposed with respect to larger school buildings. In New York state, for example, it is impossible in a city to engage in repair work involving any very great amount of money, without having the approval of the state department, who may, if in their judgment the building would be less than satisfactory after the repairs are completed, condemn the building. There are throughout the United States in rural communities, and even in our larger cities, thousands of school buildings that are unfit for use. It is a very simple matter to apply to them standards which are commonly accepted by those acquainted with school sanitation and hygiene. There would be a real advantage in applying these standards to schools by the proper officer in every state department in the land. Catastrophes that have often been repeated, and ill health, which has

been a direct consequence of the conditions found in many of our older school buildings, should be wiped out through the application of school building standards and the requirement of reconstruction or abandonment of thousands of school buildings.¹

Textbooks. — Through state adoption many states control the textbooks used in the public schools. However, the experience of the states operating under this plan has not always proved satisfactory, principally because the state-adopting boards are sometimes influenced too much by politics and too little by the teachers who are to use the books. This results in the question of price having undue weight in the choice of books, often overbalancing considerations of relative educational merit.

Again, confining the selection of textbooks to a small number of persons appointed by the governor of a state (who may not be free from the influence of politics), the members of such a commission not being chosen wholly from the teaching body of the state, sometimes results in choosing textbooks unsuited to the needs of the schools. Dissatisfaction with the books naturally follows, so that at the end of the adopting period sweeping changes take place at heavy expense.

Another way some states secure control of public school textbooks is through state publication. The state publication of textbooks has not, in the judgment of the writers,

¹ For standards for city school buildings, see Strayer and Engelhardt, *A Score Card for City School Buildings*. For standards for rural school buildings, see Strayer and Engelhardt, *A Score Card for One to Four Teacher Schools*. Bureau of Publications, Teachers College, Columbia University.

proved a success. The temptation to hire some one who has good standing locally to prepare a book in a short time has resulted in a poor type of book. Certain it is that the opportunity to choose from all of the books prepared in a given subject will result in the choice of a better book than can be had when the state must confine itself to a publication that has been prepared locally. In so far as the figures are available, it would appear that the state publication of books has been costly, and not economical as has been argued by those who have favored this measure.¹

The most reasonable solution of the textbook question is found in the laws of those states providing for the furnishing of textbooks free to pupils, and giving the widest possible choice in the selection of books. Under this plan less agitation of the textbook question occurs than in any other form of textbook supply. The result is fewer radical changes of books and therefore less expense. We may confidently expect that all the states will eventually provide free textbooks for all the children attending the public schools.

Compulsory education. — Compulsory education laws are written upon the statute books in a great majority of the states. The enforcement of compulsory education has unfortunately failed of satisfactory development in most American communities. We cannot hope to have any satisfactory administration of our compulsory education laws until we accept the idea of a census which is taken continuously, instead of the annual census which is now commonly provided. We must know where children are located at all times and take account of their moving from

¹ See Brown, *State Publication of School Books*. Macmillan Co.

one community to another if our compulsory education laws are to be enforced. The idea which is coming to prevail of a cumulative record of the pupils' school work and attendance, with the further provision that this credential be carried with him from school to school as he may move, is a necessary supplement to the permanent continuing census. The state may not hope to enforce compulsory education without providing a penalty for the community which fails to enforce the law. This is done to best advantage by withholding state moneys if upon inspection the community is found to have failed to provide an adequate enforcement of the compulsory education law.

The state has entered the field of compulsory education in other ways. In one state, for example, pupils who are three or more years over-age for their grade must, by law, be organized in classes of not more than fifteen pupils in order that they may receive special instruction. Truant and incorrigible children are, by law, required to be placed under the control of a special type of school or institution in certain of the states. Requirements of attendance at night school, beyond the ordinary age of compulsory attendance, is required in certain states of those who have less than a minimum academic attainment prescribed by law. All of these requirements are in recognition of the obligation of the state to provide for the education of all the children.

Courses of study. — In many states the control of the subject matter taught in the schools is exercised through a state course of study. In these documents there will commonly be found an outline of subject matter to be

taught in the several grades of the elementary school, and in some cases, a syllabus of work to be undertaken in the secondary school subjects. In every state, local communities, with a supervisory corps capable of furnishing leadership to teachers in the development of more adequate courses of study, substitute their local courses for the more meager outline provided by the state. It would seem unwise ever to impose upon a local community a state course of study when this local unit has developed beyond the minimum requirements set by the state. Under an adequate scheme of state legislation, approval might properly be granted by the state authority for the use of the local program of studies, always provided that the subjects commonly accepted as fundamental be included.

Training of teachers. — In most of the states, under existing conditions which fail to provide any adequate basis in education and professional training for all teachers entering the service, some provision is made for their subsequent professional training. Teachers' institutes, varying all the way from inspirational meetings to schools organized for serious study, are to be found. The summer session of state institutions for the training of teachers has, in many cases, provided the minimum of continued professional training required by law for those who would continue to be certificated. There will always be a place for the professional meeting of teachers, as there is for the associations of other professional people who meet from time to time to consider the advancement made by the workers in their group. If we ever come in the United States to an adequate basis in the preparation of teachers before

their original certification, there will be less need for the short period of training now offered in institutes and summer schools, where this training is intended to take the place of the professional course which should precede the entrance upon professional activity.

The state department of education.— The organization of public education, some aspects of which have been suggested above, are carried out in the first instance by the state department. In the United States to-day it is common to have a state superintendent of public instruction, elected by popular vote, and to have a state board of education, composed of men who serve by virtue of the other offices in the state government or in the state and local educational system which they hold. States which have faced the problem of the reorganization of their state administration in recent years have tended to develop a type of administrative organization paralleling that of our cities. There is erected a state board of education appointed by the governor, which in turn selects the state superintendent or commissioner of education. This chief executive officer nominates to his board the heads of departments who work under him. From the standpoint of continuity in educational administration, it would seem desirable to adopt throughout the Union the state board and the commissioner selected by the board plan. It is unfortunate when a state officer, elected by the people and with the highest professional standards, loses in the next election because of his failure as a politician. There are undoubtedly those who are able to work for the best interests of the schools and to maintain themselves politically. Our experience in city school administration would

seem, however, to indicate that we may hope for the most adequate professional service and for the most consistent development of educational policies when we remove the state superintendent from politics and make him responsible to a board of education which will continue him in office as long as he is able to satisfy them of the soundness of his educational policies.

The state education office is organized to promote the welfare of education throughout the commonwealth. To this end, in those states having the better type of organization, specialists are employed whose business it is to inquire concerning the condition of various types of schools or parts of the school system, and to lead in the development of more adequate provisions for education throughout the state. Quite commonly there will be found an assistant superintendent or commissioner of elementary schools, of secondary schools, of rural schools, of vocational education, of educational statistics, of the certification and training of teachers, and the like. If the state is to assume adequate leadership, men and women of first-rate ability must be had for these offices. Assistants, stenographers, and clerks must be provided in order that they may work to best advantage. Information must be gathered, conferences held, and publications issued from time to time, which will command the respect of the best qualified teachers and administrators throughout the state. The tendency to regulate education by state law, and to recognize education as a state function, looks in the direction of the development of an increasingly important and efficient administrative and supervisory staff in the state education office.

City and county school administration. — The principles which govern in the case of the county board of education, or of the city school board, are identical. There can be no question with respect to the necessity of distinguishing between the function of the superintendent of schools and that of the lay board of education. A board of education elected at large, consisting of from five to nine members, whose terms of office equal in length the number of members of the board, serving without pay, has been found acceptable in most American cities. The attempt to reform city school administration in connection with the establishment of the commission form of government, by the designation of one of the commissioners elected as commissioner of education, has not proved successful. The commissioner of education in this case finds himself in the anomalous position of being the sole authority responsible for public education, and yet without professional preparation for his duties. He finds, as well, the necessity for employing a superintendent of schools who ought to be a capable executive. The tendency is for the lay commissioner of education to assume responsibilities which are to be placed in the hands of the professional executive, and for the superintendent of schools to have no appeal except to the judgment of a single individual, whose creature or clerk he may soon become. Any superintendent of schools would prefer to submit his plans to a group of laymen, with the difference of opinions which might develop, rather than to find himself under the necessity of conforming constantly to the opinion of a single individual who has had little or no professional training in the administration of education.

The superintendent and the board of education. — The relation of the superintendent of schools to the board of education is best expressed by defining the duties of the board. The more important of these obligations may be listed as follows:¹

1. To select the chief executive officer and support him in the discharge of his duties.

2. To appoint, upon nomination and recommendation of the chief executive, assistant superintendents, supervisors, principals, and teachers.

3. To pass upon the annual budget for maintenance prepared by the chief executive and his assistants.

4. To adopt, upon recommendation of the superintendent of schools, textbooks and courses of study developed by the chief executive, the supervisory staff, and the teachers.

5. To require and to discuss reports of the chief executive officer concerning the development of the school system in terms of the achievements of pupils, teachers, and supervisors.

6. To consider and to pass upon the recommendations of the chief executive officer for additional capital outlays — building sites, improvements, etc. — and to determine the means of financing such outlays.

7. To require report upon plans approved by the chief executive and his chief assistants for school buildings.

8. To adopt, upon consultation with the chief executive, a set of rules which will determine the government of the school system.

¹ See Theisen, *The City Superintendent and the Board of Education*. Bureau of Publications, Teachers College, Columbia University.

9. To act as a court of final appeal for the teachers, supervisors, and school patrons in cases which the superintendent has not been able to dispose of, or which may be appealed from his decision.

The outline of the organization of public education which has been sketched above must be supplemented by careful study by a teacher who would understand fully the school system in which he works. It will be a fortunate day for public education when administrators seek to have all teachers understand and participate in the development of administrative policy. It has been most unfortunate when teachers have been led by self-seeking individuals, either within their group or outside of it, to antagonize the administration without understanding either the organization of the school system or the purposes in the minds of the administrative staff. We may confidently expect, when adequate professional preparation is provided for all who would enter the teaching profession, that one of the fundamental fields of study will be that of the organization, administration, and supervision of public education in the United States.

QUESTIONS

1. Why is education a state function in the United States?
2. Give five reasons why the county is the desirable unit for educational organization and administration for all schools which do not come under city jurisdiction.
3. Why should the board of education in a city have the right to levy taxes for educational purposes? Should the board of education have complete financial freedom from other municipal boards?
4. Why is it desirable that state educational authorities have the

right to determine whether school buildings may or may not be used for educational purposes?

5. To what extent should state educational authorities be responsible for the adoption of textbooks used in each local community?

6. Why has the state publication of textbooks been a failure?

7. To what degree should free textbooks and free school supplies be provided for children? Do you agree with this statement — "It is quite as proper to demand that a soldier buy his own rifle and ammunition as to request school children to furnish their own textbooks and supplies?"

8. How much state control should be exercised in the formulation of courses of study to be utilized in local communities?

9. Why is it more desirable that the state superintendent of schools be appointed by a state board of education than elected at large by the people?

10. What provisions should be made by the state for the continuous education of teachers while in service?

11. Show by diagram the relationship that should exist between the board of education, the superintendent of schools, the supervisors, and principals, and the heads of all departments in your school system.

12. Rank the following six duties performed by city boards of education in order of their importance:

- (a) Adopt, upon consultation with the chief executive, a set of rules for the government of the school system.
- (b) Advise with the chief executive, affording a group judgment, on his recommendations for extensions or readjustments of the scope of educational activities.
- (c) Appoint — upon nomination and recommendation of the chief executive — teachers, principals and supervisors.
- (d) Require and discuss report of the chief executive concerning progress of the schools — in terms of achievements of pupils, teachers, supervisors.
- (e) Select the chief executive officer and support him in the discharge of his duties.
- (f) Visit the schools, observe or investigate the efficiency of instruction.

13. Indicate any duty in the list of Question 12 that you think boards of education should not perform. Give reasons for this opinion.

14. What is the situation in your own state in respect to the election of the state superintendent of schools? What changes in the state law are desirable as regards the selection of your state board of education?

15. Why is it necessary that a teacher should understand how education is administered in his state?

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Strayer, Report of a Study of the Public School System of Boston.

CHAPTER III

THE SUPERVISION OF THE TEACHER'S WORK

SUPERVISION is necessary for the successful development of a school system. Supervisors have sometimes failed to understand the point of view of teachers with whom they work. Teachers have sometimes misconstrued the motives of their supervisory officers. If both groups were one hundred per cent efficient, all lack of understanding and appreciation for each other's work would disappear. In the situation as it is, supervisors, more or less efficient, must work with teachers who vary in attainment.

The function of supervision. — It is not possible to organize a school system without placing in the hands of a supervisory group the responsibility for coördinating the work which is done by the individual class teacher. There must even be a certain requirement of uniformity. Children move from school to school, and even within the county, or the state, or in the nation, from one school system to another. It would be obviously unfair to have an aggregation of school units controlled by individual teachers, which would lose sight of the necessity for providing for the progress of school children from teacher to teacher and from school to school.

A certain degree of uniformity with respect to the subject matter taught is entirely defensible upon other grounds. Children are being educated for participation in our modern American life. The school program is intended to give

them certain common experiences that will bring them into sympathetic appreciation, each of the other, and establish for them certain purposes and ideals which should characterize the citizens of a democratic community. Every one will admit that all children should be taught to read and write the English language. There is little disagreement concerning fundamentals of arithmetic. Certain experiences provided by nature study in the lower grades, and by science in the upper grades and the high school, are necessary for one who would understand the world in which he lives. Arithmetic in the elementary school and the mathematics of the intermediate and high school are requirements for those who would continue their education. A study of our institutions and an appreciation of our form of society are required by all who would participate intelligently in our common life. Growth in power to appreciate in the field of literature and the fine arts is essential in the life of one who is to have not simply the ability to make a living, but also the ability to enjoy life. The school system must order these experiences in such a way as to make for progress of children through the school system and with respect to the intellectual maturity and breadth of experience characteristic of children at different age levels.

Supervision has to do with matters, other than the course of study, which are equally important. In a rural school the teacher's daily program, with a provision for alternating in successive years the work of certain grades, makes for efficiency. The fewer recitation periods that are thus provided will make possible greater efficiency in teaching. In a city school system special classes are organized to re-

lieve the regular teachers of those children who vary in extreme measure from the group that are characterized as normal. Wise supervision will often suggest, within a given classroom, the grouping of children into two or three sections so that the work required of them may more nearly correlate with their previous attainment and abilities. The efficiency of the work of a bureau of attendance, whether in a rural community or in a large city, is, in considerable measure, determined by the attitude of the teacher and by the coöperation which he provides. The health service and opportunities for physical education which the school system seeks to provide may fail or succeed on account of the antagonism or good will of the teacher in the classroom.

Coöperation between teachers and supervisors. —

There is, of course, room for debate with respect to any one of the services or supervisory groups with which the teacher finds himself working. There should always be the opportunity for discussion of the organization of the service in which the teacher is working, but after such opportunity for discussion has been provided, a teacher, even though he thinks himself wiser than the supervisory officer placed over him, should conform to the program of work established for the sake, not of the supervisor, but of the children. Teachers who are sincere in their desire to improve the work which the school system does, and who are willing to contribute time and energy to the development of more adequate plans of work, will ordinarily find their supervisor anxious to have their help. There is no place in a school system for a teacher who is merely dissatisfied and who seeks to interfere with the carrying out of the plans

which have been adopted, and who spends his time in attacking the supervisory corps.

The organization of the supervisory corps. — The cause of weakness in the supervision of our American schools is to be found in the method by which the supervisory corps has been established and its consequent imperfection in organization. Too often additional supervisory officers have been added to the school system from time to time without any proper coördination of their functions. The logic of the situation is very simple. There must be a chief supervisory officer — the superintendent of schools. There may be provided under the superintendent certain associate or assistant superintendents charged with separate parts or functions of the school system. Under these, or directly under the superintendent, there are frequently found the special supervisors. In a city school system where from eight to one hundred teachers work in the same school building, there is usually a school principal. The real unit in the school system becomes the school building. The school principal should be the supervisory officer to whom teachers look for guidance. It should never be possible for assistant superintendents, or for general or special supervisors, to make appeals or to require work from teachers, without carrying their program to the office of the principal and having his hearty coöperation and support. Under a wise system of supervision these general supervisory officers will never seek to make all schools exactly alike. They will, rather, find in the principal, in the group of children in his school, and in the special interests and aptitudes of the teachers, an opportunity for carrying on experiments and variations from the usual school program which will

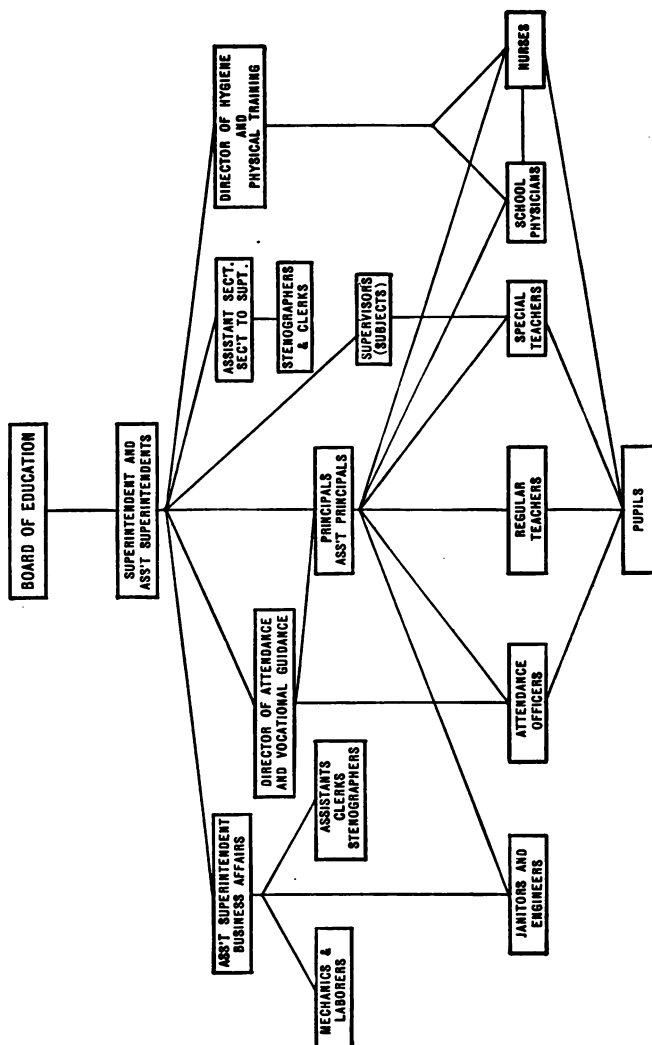


FIGURE I. — ADMINISTRATIVE ORGANIZATION OF A CITY SCHOOL SYSTEM.

contribute to the development of the school system and to the welfare of children and teachers.

The proper organization of the supervisory corps is illustrated in Figure 1. The lines running from superintendent, assistants, and supervisors to the principal indicate the method of approach to the individual teacher. If it were not for complicating the diagram, there might be a series of lines showing the possibility of a teacher's discussion of special plans of work with the general supervisory corps, and of a return from such a discussion to the principal's office for confirmation and support.

The criticism of instruction. — The work of the supervisory corps is intended not only to make for continuity in the educational program, but to provide for a maximum development of efficiency upon the part of all teachers. Any competent supervisor will deal, in considerable measure, with the instruction that is actually given in the classroom, to the end that the work may be done as well as it is possible for the individual teacher to do it. The criticism of instruction must always find a place in the work of the supervisor, and should be welcomed by teachers who hope to grow professionally. The emphasis should be placed, both by the supervisor and the teacher, upon the constructive nature of the criticism. No teacher has ever been benefited, nor has any supervisor ever earned his salary, by going into a classroom and remarking that he approved of the work that was done. Any teacher has a right to rebel against a supervisor who comes into his classroom merely for the sake of rating the work that he sees and leaving without suggesting the methods to be undertaken to improve the teaching that is being done.

Criticism of this sort, which is purely negative, has been in many cases the cause of dissatisfaction upon the part of American teachers.

Appreciative criticism. — A competent supervisor gains the respect of teachers and their good will by an appreciative-constructive criticism. Any teacher who is fit to be kept in a classroom will, on occasion, do excellent work. It does not follow that this same teacher will do equally well in another field, even though the same principles of teaching are involved. A teacher may handle most successfully the drill work in arithmetic. He may realize the necessity for limiting the amount which may be taught at one lesson. He may know how to secure a maximum of attention, he may keep clearly in mind the necessity for one hundred per cent of accuracy. The same teacher may, in a spelling lesson, fail to realize that the principles of habit formation should control. He may attempt to teach twenty-five words in a single day. He may dictate the lesson to a class, who have little or no interest in the procedure, and who are paying practically no attention to the work in hand. The appreciative-constructive criticism will seek to carry over from the success of the lesson in arithmetic to the spelling lesson, by making clear to the teacher the principles involved and the many situations in which these principles are or ought to be found in operation. It may sometimes be best for the supervisor to do nothing more than to indicate his appreciation of the principles which he believes to have made for success in the lesson that is well taught, and to save until another time his suggestion of the application of these principles to a particular situation like the spelling lesson, in which the same principles are violated. It will

happen at times that the successful teaching of an arithmetic lesson will not be repeated, even when the subject matter is of the same sort and the principles involved identical. We have all at times done our very best work and have failed to repeat this success because we have scarcely realized the significance of our own achievement. A capable supervisor will seek constantly to capitalize the success of teachers.

Constructive criticism of failures — The supervisor who has the confidence of the teachers should discuss failure, or lack of efficiency, with the same frankness that he characterizes his appreciation of work well done. Many supervisors have difficulty in convincing teachers that they are impersonal in this destructive-constructive criticism of their work. The secret of good will and good understanding is to be found, first, in the appreciative criticism which has established right relationships between supervisors and teachers, and second, in the appeal to principle when the supervisor seeks to establish the necessity for a change of method. Fault-finding, or a criticism which is so interpreted by the teacher, never results in better work. To take a lesson as taught, and to analyze it in terms of the principles of teaching involved, and then to suggest measures to be taken for improvement, will be accepted by any fair-minded teacher.

A teacher who has assigned a poem to be committed to memory, and who allows the children to go to their seats and study it, seeking to master it line by line and paragraph by paragraph, will scarcely resent the suggestion offered by a competent supervisor that he experiment with the method of learning by wholes. In a case like this, one of

the best ways of establishing the principle would be for the supervisor to ask the teacher to report later on an experiment which might be outlined briefly as follows: Read the poem through to the children as well as you can. Interpret it for them, have them pick out the main thoughts, have them tell the story, at first in outline, and then as nearly as possible in the language of the author. Call attention to the phrases which express so beautifully the thought of the author. Have the children come to see, if they can, that when they are able to reproduce the thought, they have committed to memory the poem. Have them try to commit the poem to memory as a whole. It will help if you will repeat it with them until they have mastered it. Try to keep the element of enjoyment of the thought before them constantly, instead of the drudgery of repeating in order to say words. I think you will find, if you try this method, that the children will not only enjoy the process of memorization, but that they will actually memorize in a very much shorter time than it took when they followed the line-by-line method.

Supervision and experimental work.— There are in every school system teachers of superior merit, who need most of all to be stimulated by their supervisory officers to undertake new types of work. The suggestive criticism which results in keeping alive professionally a capable teacher is, in some respects, even more important than the correcting of mistakes, or the capitalization of success. Many a good teacher comes to be a day laborer in his attitude toward the work he has to do because supervisors are constantly seeking to find fault or to praise the thing as it is done, instead of directing the suggestions which might

lead to greater professional growth and enthusiasm. A good teacher will undertake new methods of work in teaching English composition, the collection of materials illustrative of work in history or geography, the use of classroom skill or public libraries in connection with his class work, and the like, when encouragement is given to undertake the experiment and recognition is forthcoming from those who supervise.

The paragraphs in which the criticism of instruction has been discussed are written both from the point of view of the supervisor and from that of the teacher. Our contention is that the teacher must understand the point of view of the supervisor and that the supervisor must see the problem from the teacher's angle. Our hope is that this brief discussion of the situation may prove helpful as it may be discussed from time to time by both parties to the situation. Teachers and supervisors are working together for the best interests of the children. There can be no opposition between the two groups when each works with a proper realization of the function of the other.

Observation an instrument in supervision. — All of us who teach have learned much from observing the work of other teachers. In other callings men and women demonstrate for each other the technique of which they are masters. A congress of surgeons will hold clinics over a period of days in order that they may learn from each other. Artists learn to paint through watching the master, as well as by profiting by his criticism. Those of us who are engaged in the art of teaching should expect not only to have demonstrated to us successful methods of work, but should be ready to take our place in demonstrating for others the skill

which we possess. A group of professional teachers should expect to meet from time to time in a room in which a teacher is actually engaged in teaching children. In some of the more progressive school systems of the United States the demonstration lesson, in which the teaching is done by the regular classroom teacher, has become a recognized instrument of supervision. A competent supervisor may properly talk over with a teacher the particularly successful work which he has done, and suggest the possibility of demonstrating this success for others. In one school system with which the writer is familiar, it has been customary over a period of years for a group of from ten to twenty teachers to meet in a single classroom and to observe for an hour or more the work of the teacher in charge. After this observation there follows a period of discussion participated in by all the teachers present, as well as by the teacher who is in charge of the class. Out of such discussion there should develop not any tendency to find fault or to condemn the teacher giving the demonstration, but, rather, a recognition of the difficulties, an appreciation of the success, and an organization of the principles involved, to the end that all may do better work. However satisfactorily the theory of education may be developed, or the application of psychology worked out in terms of classroom procedure, we shall always depend upon the demonstration of successful teaching as one of the more important methods of improving our work.

Exhibits as an aid in supervision. — In many school systems exhibits of school work have proved helpful to teachers. The worth of an exhibit depends upon its uniqueness and genuineness. The specially prepared and care-

fully edited products which are sometimes sent to fairs and expositions are not the type of exhibit that is needed. The regular daily work of the classroom, in so far as it can be put into form for the observation of others, will often prove stimulating to teachers facing the same problem with other groups of children. The writers remember a superintendent's office in which there were filed by grades the compositions written by children. There was very great variation in the type of subject used, the illustrations prepared or secured by children, the form of discourse written, and the like. Teachers could be found in this office on practically every Saturday during the school year getting suggestions from the work of their colleagues. In the same office were the drawings which had been done by children and the products of the work done in the industrial arts. The course of study in this school system suggested many things which teachers had found it difficult to work out. The exhibits often made possible for them the realization of the ideals or plans of the course of study. The more wide-awake professionally a corps of teachers is, the more eagerly they will contribute to the development of this genuine type of exhibit, and the more certainly they will go to it for suggestions. A wise supervisory corps will delight in the variations in the achievement of pupils and in the evidences of their attainment which are thus brought together.

The supervisor's control of visiting. — It has long been customary to allow the teachers certain days for visiting. The fundamental idea is that of learning by seeing other people teach. The success of visiting, both from the standpoint of the supervisor and from the standpoint of the pro-

professionally minded teacher, depends upon the meeting of two conditions, — first, that a teacher shall go to find help and not to prove his superiority, and second, that as a result of the visit a report be made, or still better, a modification of method be brought about in the work of the teacher who did the visiting. Nothing can be more futile than for a teacher to put on his best clothes in order to demonstrate, even in his apparel, his superiority to the teacher visited. On the whole, the most satisfactory type of visiting is that which is undertaken in the school system in which one works. There is indicated in this interchange of courtesies an appreciation of the good work that is being done at home and a definite plan for spreading through the school system the very best that is done by any of the teachers. Much good may come from the organization by the supervisory corps of visits by young teachers to the older members of the corps, who are able to demonstrate skill in particular fields, and in some cases, an equal gain may come where the older teacher visits his younger colleague, who has gathered from his more recent training and experience a technique which can be easily assimilated by the more mature teacher.

Teachers' meetings. — Teachers' meetings may be so organized as to be productive of great gain to the school system. They have at times succeeded only in arousing the antagonism of teachers. A teachers' meeting should be a place where the professional teacher goes to get help. There is a place for the meeting that results in a broad point of view with regard to the work of education in which the teacher is engaged, — a meeting which might properly be called "inspirational" in the best sense. The great major-

ity of meetings should, however, be places where teachers go to work. They should be organized with respect to the special problems confronting different groups of teachers. Meetings for lower grade teachers, for the teachers in the intermediate grades, for the teachers in the upper grades or intermediate school, or for high school teachers, rather than an attempt to keep all of the corps together, are what the situation demands. In any one of these group meetings the special problems considered may have to do with methods of instruction, with the courses of study, with the achievements of pupils, with policies of the supervisory or administrative staff which are submitted to teachers for their consideration, with the development of new plans of work in coöperation with other agencies in the community, and the like. The important point is that the meeting be organized with the definite idea of involving the coöperation and contribution of teachers, and that it be not in a place where teachers go to receive instructions which might better be handed to them on a mimeographed sheet. Much of the dissatisfaction with the work of supervisors would disappear if there were preliminary meetings, in which the work to be undertaken were carefully discussed. Many mistakes would be obviated if plans were discussed by teachers before they are promulgated by supervisors.

Making courses of study. — Some of the most worthwhile teachers' meetings that the writer has ever seen have had to do with the development of courses of study. No adequate course of study has ever been developed without having back of it the work of the subject-matter specialists, the work of the supervisor, who sees the subject or part of

it in relation to the whole scheme of education to be provided, and possibly most important of all, the criticism and suggestion of the teacher who knows whether or not the work can be done with children of a given grade. There are, of course, teachers employed in the school system who resent the extra burden involved in the development of the courses of study which they are asked to teach. It would seem, however, that any professional teacher would at least be willing to meet for the discussion of the program of work after it had been drafted, and that he would be only too glad to contribute to that discussion suggestions growing out of his own experience. There should be present, when the making or the revision of courses of study are undertaken, persons whose primary obligation is to work in this field. Teachers of unusual ability, who have a genuine interest in the problems of the curriculum, should, from time to time, be excused from their regular classroom work in order to spend their time in coöperation with supervisors in the development of courses of study.

When teachers participate in the making of courses of study, there will come to be a more satisfactory agreement concerning the minimum of required work which is to be undertaken by all teachers. Any group of teachers meeting for the discussion of the work to be undertaken in arithmetic, or geography, or English, in a given grade, will find it possible to agree on certain experiences which must be made available for all children. This gives the corps in many respects the most important part of the course of study. These same teachers, when at work on a course of study, will suggest alternatives which they have found valuable in working with different groups of children. The

environment in which children live, the racial group to which they belong, the opportunities for experience outside of the school, and the like, will suggest differences in method of approach and in the content of the course of study which will mean greater efficiency for all of the schools. It is important that there be recorded, as well, in the course of study suggestions for work which will be designated as entirely optional. In discussions which may arise as the courses of study are made, a teacher may tell of his experiences entirely outside of any requirement which should be imposed upon other teachers. To record these suggestions in the course of study (and the more teachers are involved in the making of courses of study the more often will such suggestions be made) will be to enrich the program of work proposed and to stimulate the more efficient teachers to their highest endeavor.

Reports of supervisory activity. — Nothing has caused more resentment among teachers than the practice of supervisors in entering their rooms with notebook and pencil in order to rate them. This resentment has often been justified because of the fact that the supervisor had done little or nothing to help the teacher to secure the superior rating which all desire. The situation has proved even more serious where supervisors have rated teachers and the rating given has been used in determining the salaries paid. Salary schedules should be based, first of all, upon length of service, and a certain maximum salary should be attainable upon this basis. Further increases above this provisional maximum should be equally available for all teachers who take advantage of opportunities provided throughout the United States for professional growth.

This might best be determined by the extent of attendance upon schools in which professional training is given. There is no objection to the supervisor's recording for his own purposes, when he is outside of the classroom, the particular strength or weakness of a given teacher. An efficient administration would require, as well, that the supervisor record the work that he has actually done to help each of the teachers under his supervision.

The rating of teachers. — There is a real value in taking any one of the carefully devised schemes for rating teachers and placing it in the hands of teachers in order that they may scrutinize their own work. All of us who teach find difficulty in analyzing the qualities which make for our success or failure. A listing of these qualities, and a frank estimate of one's own success with respect to each of them, ought to prove helpful to any teacher. Among the schemes of rating which have been proposed, that which appears in the Fourteenth Yearbook, Pt. II, of the National Society for the Study of Education, prepared by A. C. Boyce, is particularly commended. For the guidance of teachers who would like to analyze their own work it is printed on the opposite page.

The ideal which is set up for the teacher is that of developing upon the part of all the children under his instruction broad social sympathies, intelligent appreciation of the problems confronting the community, the state, and the country in which he lives, and the ability and practice of cooperating with others for the common good. This same ideal should apply in the work of teachers and supervisors, not only as they live and work as members of the larger community, but also as they work together in the school

EFFICIENCY RECORD

Teacher..... City..... Grade taught.....
 (or building) (or subject)
 Experience..... years. Salary..... per month
 Highest academic training..... Extent of professional training.....

DETAILED RATING		V. P.	POOR	MEDIUM	GOOD	EX.
1. Personal Equipment	1. General appearance					
	2. Health					
	3. Voice					
	4. Intellectual capacity					
	5. Initiative and self-reliance					
	6. Adaptability and resourcefulness					
	7. Accuracy					
	8. Industry					
	9. Enthusiasm and optimism					
	10. Integrity and sincerity					
	11. Self-control					
	12. Promptness					
	13. Tact					
	14. Sense of justice					
2. Social and Professional Equipment	15. Academic preparation					
	16. Professional preparation					
	17. Grasp of subject matter					
	18. Understanding of children					
	19. Interest in the life of the school					
	20. Interest in the life of the community					
	21. Ability to meet and interest patrons					
	22. Interest in lives of pupils					
	23. Cooperation and loyalty					
	24. Professional interest and growth					
3. School Management	25. Daily preparation					
	26. Use of English					
	27. Care of light, heat, and ventilation					
	28. Neatness of room					
4. Technique of Teaching	29. Care of routine					
	30. Discipline (governing skill)					
	31. Definiteness and clearness of aim					
	32. Skill in habit formation					
	33. Skill in stimulating thought					
	34. Skill in teaching how to study					
	35. Skill in questioning					
	36. Choice of subject matter					
	37. Organization of subject matter					
	38. Skill and care in assignment					
5. Results	39. Skill in motivating work					
	40. Attention to individual needs					
	41. Attention and response to the class					
	42. Growth of pupils in subject matter					
	43. General development of pupils					
	44. Stimulation of community					
	45. Moral influence					
GENERAL RATING						

Recorded by..... Position..... Date.....

system. Much of the misunderstanding which has characterized the relationships of the two groups will disappear in the light of a full and free discussion of the purposes and methods of supervision. The obligation to bring about this better understanding rests quite as much upon the teachers in the classroom as upon the supervisors in the central office. The development of a more democratic system of educational supervision rests with all of the members of our profession.

QUESTIONS

1. To what degree is uniformity in the education of children of any grade desirable and necessary in a school system?
2. What coöperation should exist between supervisor and teacher? How far should the teacher, who is being supervised, be permitted to remain free to follow his own developed plans?
3. What differences in service rendered exists between the principal who supervises and the principal who merely manages the school?
4. Which of the following supervisory plans have you found most helpful? Why?
 - (a) Demonstration lesson by principal, supervisor, or teacher.
 - (b) Discussion of the demonstration lesson.
 - (c) Conference between teachers and supervisor.
 - (d) Reading and discussion of books or magazines.
 - (e) Groups of teachers working on specific problems.
 - (f) Use of standard tests.
 - (g) Visiting other teachers.
5. What is supervision of instruction? What are its fundamental purposes?
6. What should be the nature of the criticisms made by a supervisor? Illustrate your points.
7. Why are standards for judging class recitations necessary in successful supervision? What determines the standards to be used in judging a recitation?

8. Frame statements of the standards you would use in judging the quality of the instruction given in each of the various types of recitations. Is there any unifying principle covering all types of recitations?

9. How necessary is it that the teacher being supervised understand and approve of the standards by which his work is to be judged? How should this understanding and approval be secured?

10. How long after a recitation is observed should the criticism of it be postponed? Why?

11. Of what value would records of criticisms by supervisors be to the superintendent? To the supervisor? To the teacher supervised?

12. Give the names of professional journals¹ you read regularly. How can the reading of journals help you in your contacts with supervisors?

13. State, if possible, two or more standards by which you would be satisfied to have your teaching judged (that is, the main things you would expect a supervisor to look for while visiting your classroom).

14. What, if anything, has happened during this year that has made a difference in the way you teach?

15. What are the chief difficulties encountered in your work? Will discussions of these problems with your supervisor help you? What recommendations or suggestions have you concerning these difficulties?

16. If you were anxious to have the most helpful kind of teacher's meeting, what plan would you follow?

REFERENCES FOR READING

Cubberley, State and County Educational Reorganization.

McMurry, Elementary School Standards.

Morrison, Survey of St. Louis Public Schools.

Strayer, Some Problems in City School Administration.

Wilson, Motivation of School Work.

¹ For complete lists of educational journals, see *The Educational Redbook*, C. F. Williams & Son, Albany, N. Y.

CHAPTER IV

VARIABILITY AMONG THE INDIVIDUALS COMPOSING A CLASS GROUP

THE work done by any teacher is limited by the variability existing among the individuals enrolled in his class. The assumption that children of the same age group, or of the same grade or class in a school system, are equal in ability is contrary to fact. Nothing that education can do will enable a non-selected group of individuals to approach equality either in ability or in achievement. Indeed, it may be confidently asserted that the net result of education is to magnify differences rather than to eliminate them. The very extreme variations from the type that we ordinarily designate as normal do not give a fair indication of the problems involved. It is only when we recognize that, of the thirty-five or forty pupils in a class, each will vary from the other in ability and achievement by differences which are small between any two but great when we consider the extreme cases that we have a correct view of the situation. The teaching of a class, if successful, must always be so conducted as to take account of these differences which exist, and to seek to provide the conditions which will make for growth and development for each of the individuals.

Common inheritances. — The common inheritance of children enables us to make a somewhat similar appeal to all of them. They all have, because of the human

nervous system which they have inherited, certain possibilities of action which we describe as reflexes, physiological actions, impulsive and instinctive actions, capacities, abilities, and the like. The very fact that they are human beings and that they have a human nervous system gives them the possibility of growth and development not possessed by lower orders of animal life. The response which boys and girls make to the stimuli which we provide for them depends upon certain bonds which are established in the nervous system. The unit of the nervous system is called a neurone. The brain itself consists of millions of neurones, each resembling a bit of string frayed out at both ends and here and there along its course. Nerves going out to the muscles are made up of bundles of neurones, each of which is a thread-like connection between the cells of the spinal cord or brain and some muscle. The nervous system is the sum total of all of these neurones. It forms an extremely complex system of connections between the sense organs and the muscles.

Children, by inheritance, possess tendencies which make for the establishment of connections between neurone and neurone in the nervous system. These tendencies to establish such connections exist and are evident in intellectual and emotional life just as truly as they are in the field of action as expressed in the movement of one's hands or in the process of walking. The ability which children have to deal with abstractions, to reason logically, to take delight in artistic achievement, to show unusual power in working with their fellows, all are dependent upon connections established in the nervous system and upon the ease with which such connections are made. We know, as a matter

of fact, the tremendous variability among children with respect to any of these qualities or abilities.

Tendencies to behavior. — While recognizing the variability which exists among the individuals of any group of children, we must take account of the equipment which they have in common. We appeal to boys and girls by understanding that they have instinctive tendencies which it is the business of education to utilize. Even though they vary tremendously in the result which is achieved, as we seek to provide for their development, we feel confident, nevertheless, of the universality of the appeal which we make when we know that we are dealing with instinctive tendencies to action. For example, children normally have a tendency to be satisfied with physical activity. In the play period in the kindergarten, in the manipulation of materials, and in the handling of tools, we find a satisfactory basis for testing the degree to which children have mastered ideas which have been presented in words.

The satisfaction which children get by being mentally active is not less apparent than that which may come from physical activity. All children enjoy the stories which are told to them by adults. As they progress in their intellectual life they show a wide diversity of interest and enthusiasm for all types of mental activity. For some the most abstract problems of science will furnish ultimately the greatest satisfaction. For others mental activity, which concerns itself with the actions of men and the adaptation of materials in construction, will give greatest satisfaction. Indeed, children are sometimes roughly classified by speaking of them as those who enjoy most the opportunity for working with symbols and dealing with abstrac-

tions and those who get their greatest satisfaction in the contemplation of action. The first group enjoy the handling of symbols, the second the working with things. It is not to be assumed, of course, that these distinctions are so marked as to deny to one who enjoys one type of activity participation in the other. The suggestion is, rather, that we must recognize these differences and understand that both groups are worthy of our best effort in providing for their development.

All children have, to greater or less degree, the instinct to collect or to acquire possession. This instinctive equipment ordinarily shows itself, first, in a desire to command and to control materials that give satisfaction in the use which children commonly make of them. Later the instinct may develop into a desire to have a complete collection in a particular field. It is even possible to think of this instinct as forming the basis for the activity of the expert who collects ideas and who builds a complete and scientific system of knowledge in a particular field.

In any group of children the instinct of rivalry and the desire for mastery are found in varying degrees. Almost any class of children, if divided into two groups each of which seeks to make a better record than the other, will be appealed to by the spirit of group rivalry which is instituted. The fighting instinct which leads boys and girls to desire to control or to dominate a situation, and which may, when properly handled, furnish the basis for the hard work necessary in order to make good in a particular field of endeavor, will be recognized by every teacher who knows boys and girls.

The social instinct which makes us comfortable when

associated with other human beings, and which gives us the contrary feeling when alone, is the foundation upon which is built much of our social conduct. It is conceivable that out of this feeling of wanting to be with human beings there develops during the period of training an almost instinctive desire to belong to the group which one most admires and that this may carry with it an acceptance of standards of conduct established by the leaders of the group. The instinct of kindliness, sometimes spoken of as the mother instinct, is present in both sexes. It furnishes a basis for the development of the feeling of responsibility which we come to accept for those who are less fortunate than ourselves. It is a very great mistake to consider this instinctive equipment as present only in the equipment of girls and women.

Variation in instinctive equipment. — The instinctive equipment which children possess, the disposition to react in terms of an instinctive tendency, will, as has been suggested above, vary with the individual. The fighting instinct, for example, will be very prominent in one boy, and will be so little in evidence in another as to need to be stimulated. The boy who always desires to fight may need to have his instinctive tendency curbed through the development of a power of inhibition in this field, or by having suggested to him a different method of meeting that type of situation. It may be necessary, at times, where the instinctive tendency is strong, to provide against the action which results, on the basis of instinct through punishment, the fear of which will be stronger than the tendency to react in the particular undesirable fashion. Except in extreme cases it is better, however, to depend

upon meeting the situation in a different manner, or in seeking to develop the power of inhibiting a particular tendency to react, than to depend upon punishments. The pain that accompanies punishment is often not a strong enough weapon to break fundamental connections in the nervous system. Punishment is always negative in its result, even when it breaks a particular connection and replaces it with nothing else.

Instinctive tendencies and social activity. — Whatever the instinctive equipment any child possesses, the problem of the school is the development, upon the basis of such original nature as is present, of conduct which is socially desirable. The skillful teacher bases his work upon the utilization of those tendencies which help to secure these desired results, while at the same time seeking to provide a different type of response, or to secure the inhibition of responses which are considered undesirable. Making use of instinctive equipment of children does not mean a blind following of instinctive tendencies. The outstanding fact with respect to the boy or girl is the modifiability of his nervous system. Responses which have become habitual may disappear. A type of action which is extremely difficult may finally become pleasurable. The limit of achievement in any field may, as a matter of fact, be set by the nervous system possessed by a particular individual. It is doubtful, however, whether this limit is ever reached by any individual during the period devoted to school education.

Interest and attention. — In working with boys and girls, one of the most striking differences which will occur will be found in their ability and willingness to attend to

a particular line of thought or action. Because of differences in instinctive equipment and ability, one boy may give free attention, where for another the attention would be forced. By free attention we mean a situation in which the object of attention satisfies a need which the boy feels. A very good example of this type of attention is found in the spontaneous play of children. Forced attention occurs where one gives his attention rather than incur the result which follows from failure to give attention. Work which we characterize as drudgery requires forced attention. In our school work we may need to appeal to forced attention because of the fact that out of it there may develop free attention. For some children there is considerable drudgery involved in learning to read, and yet these same children may later give free attention in this field because of the satisfaction which they get out of reading after the mechanics have been mastered. In like manner, the beginnings in mathematics may require forced attention, while after a certain degree of mastery has been acquired, free attention may follow.

It will help to understand the situation if we classify attention further as immediate and derived. By immediate attention is meant attention given to the situation for its own sake. In the case of derived attention we give attention because of something attached to or connected with the situation. Free attention may be immediate or derived. Forced attention is always derived.

A popular fallacy has suggested the very great value of forced attention. The old school of disciplinarians were apt to think of value in direct relation to the repugnance associated with a task. As a matter of fact, the

greatest work of the world is accomplished in the situation in which the individual gives free immediate attention. This type of attention is characteristic of one who is wholly absorbed in his task. It accounts for the discoveries of the scientist, for the skill of the surgeon, for the creation of the architect, for the mastery of the leader in business or in commerce. There may be, of course, situations arising within the total field in which any worker engages, which call for derived attention. The overcoming of a particular obstacle which stands in the way of an accomplishment which is most absorbing is a case in point. Human beings are constantly called upon to engage in types of activity which contribute to the larger ends which they have in mind, types of action which are in themselves to be thought of as uninteresting, and yet which are engaged in wholeheartedly because of the remote end to be achieved.

Motives for work. — “There is a very great difference between the kinds of motives or values chosen for derived attention, and their value varies in accordance with the following principles. Incentives should be closely connected naturally with the subject to which they are attached. They should be suited to the development of the child and be natural rather than artificial. Their appeal should be permanent, *i.e.*, should persist in the same situation outside of school. They should really stimulate those to whom they are offered. They should not be too attractive in themselves. Applying these principles it would seem that derived interests that have their source in instincts, in special capacities, or in correlation of subjects are of the best type, while such extremely artificial

incentives as prizes, half holidays, etc., are among the poorest.”¹

From the analysis given above it would appear that teachers should work primarily, when they find it impossible to depend upon free attention, for free, derived attention, rather than to place large dependence upon forced attention. There may, of course, develop those situations in which forced attention is necessary. If there is no other way of learning to spell, or of mastering a multiplication table, or of learning a declension, then it must be employed, but a good teacher will always seek to pass from forced attention to free, derived attention, and he will think of his greatest success as measured by the number of cases in which children, as a result of his teaching, come to give immediate, free attention to the work to be done.

Variation in the achievements of children. — The differences among the individuals of a class group stand out most clearly when we seek to discover their achievement in any particular subject. Take, for example, the number of multiplication problems of a standard difficulty, such as is provided by the Courtis tests. In a given sixth grade the range of ability is indicated in Table I on the next page.

It will be noted that there was one pupil in this class who failed to solve even one problem correctly, that one pupil solved only one problem correctly, that three pupils were able to complete four problems correctly, and so on, through the list, to a maximum of fifteen problems solved correctly in six minutes by the most capable pupil in the class.

If we take a different situation, say that which is revealed

¹ Selection from Strayer and Norsworthy's, *How to Teach*, p. 46, used by permission of the Macmillan Company, publishers.

TABLE I

NUMBER OF COURTIS MULTIPLICATION PROBLEMS SOLVED BY SIXTH
GRADE PUPILS IN 6 MINUTES

NUMBER OF PROBLEMS	NUMBER OF PUPILS	NUMBER OF PROBLEMS	NUMBER OF PUPILS
0	1	9	3
1	1	10	3
2	0	11	5
3	0	12	1
4	3	13	0
5	1	14	1
6	2	15	1
7	3	16	0
8	4		

TABLE II

DISTRIBUTION OF THE SCORES ON THE HANDWRITING OF ENGLISH
COMPOSITIONS OF FIVE GRADES OF A CITY SCHOOL SYSTEM¹

GRADE	5	6	7	8	9	10	11	12	13	14	15	16	17	18	TOTAL PAPERS	MEDIAN SCORE
4B	2	8	49	109	71	28	12	1				1			281	8.2
4A		5	29	82	71	32	31	12	5	2					269	8.8
5B		13	31	66	75	32	24	8	2						251	8.7
5A			13	71	137	51	18	3	2						295	9.0
6B				2	43	94	52	50	8	2					251	9.4
6A				7	42	81	45	34	9						218	9.2
7B				4	26	55	60	41	21	5	1				213	9.8
7A					8	61	60	61	28	7					225	10.2
8B						9	12	25	28	47	32	7	2		162	12.7
8A						9	31	61	63	26	10		1		201	11.5
Total	2	26	135	447	663	403	357	181	96	45	7	4			2366	9.36

¹ Handwriting judged according to the samples on Thorndike's Handwriting Scale.

by measuring the quality of handwriting which children produce, quite as startling differences are shown. Table II on the preceding page shows the number of pupils in each of several grades from the fourth to the eighth who received scores varying from Quality 5, which is extremely poor handwriting, to Quality 16, which approaches perfection in penmanship. The figures represent several groups of children in each of five grades of a large city school system.

Differences in achievement of children in the same school grade. — It is interesting to note from the table given above that very great differences occur among children of the same grade group. It is equally noteworthy that there are many children in the fourth grade who write better than those who show the poorest penmanship in the eighth grade. It will be noted from the table that there are nine pupils in each division of the eighth grade who write Quality 9; there are seventy-one children in the 4B grade who write Quality 9; twenty-eight who write Quality 10; twelve who write Quality 11; one who writes Quality 12; and one who writes Quality 16, which is as good as is written by any pupil in the school system.

In like manner, if work in English composition is measured, most startling differences in the achievement of children are indicated. A composition which scores zero is a quality of composition which fails to express ideas, the incoherent jumbling of words. Quality 8, which is found at the other end of the scale, is so superior as to be written by very few people, either in school or out of it. Table III shows the variation within the grade groups from the lower fourth to the upper eighth grade, and indicates, as well, the large overlapping between grades.

TABLE III

DISTRIBUTION OF ENGLISH COMPOSITION SCORES FOR FIVE GRADES

As determined on the Nassau County Supplement to the Hillegas
Scale for Judging English Compositions

SCORE	4B	4A	5B	5A	6B	6A	7B	7A	8B	8A	TOTAL
0	2	6						2			10
1.1	34	66	3	10							113
1.9	119	86	23	60	10	4					302
2.8	104	74	85	120	80	46	26	22	4	2	563
3.8	18	43	143	64	125	130	91	108	65	30	817
5.0	4	3	28	22	50	56	62	54	92	129	500
6.0			2	3	5	4	11	12	41	37	115
7.2							2		1	3	6
8.0									1		1
Total	281	278	284	279	270	240	192	198	204	201	2427
Median	2.26	2.18	3.56	2.93	3.72	3.91	4.16	4.10	4.80	4.98	3.61

It will be noted from the table given above that there were papers found in the 4B grade which were scored as zero in value, and that the highest scores were recorded at 5 on the scale. The amount of this difference appears when one rates the examples which were proposed for the purpose of determining the value of the compositions. Zero on the scale is represented by the following selection:

I went going on to the Dox Saturdaye dnd day we the boys and I well going home and I well going the boys. and I will going these read in and they to night. and we or night. I well going a ground shalt and I gone out I will going to shea shouse and I will shoe or the skill of the shea of night.

Quality 5 is represented by the following selection :

Next Saturday I should like to go away and have a good time on a farm. I should like to watch the men plowing the fields and planting corn, wheat, and oats and other things planted on farms.

Next Saturday I will go to the Pioneer meeting if nothing happens so that I cannot go. I should like to go swimming but it is not warm enough and I would catch a bad cold. I should like to go to my aunts and drive the horses, I do not drive without some older person with me, so I cannot go very often.

I should like to see my aunts cat and her kittens, too. I think I can, to.

The complete range of the scale is indicated by the following selection which scores as 8 on the scale.

One Sunday, towards the end of my summer vacation, I was in bathing at the Parkway Baths. In the Brighton Beach Motordrome, a few rods away, an aviation meet was going on. Several times one of the droning machines had gone whirring by over our heads, so that when the buzzing exhaust of a flier was heard it did not cause very much comment. Soon, however, the white planes of "Tom" Sopwith's Wright machine were seen glimmering above the grandstand. Everyone stood spellbound as he circled the track several times and then headed out to sea. He was seen to have a passenger with him. Suddenly, the regular hum of his motor was broken by severe pops, and the engine ran slower, missing fire badly. In response, to Sopwith's movements, the big flier tilted and swooped down to the beach from aloft like an eagle. The terrified crowd made a rush to get out of the way as the airship came on, but Sopwith could not land on the beach, but skimmed along close to the water instead. Suddenly his wing caught the water, and the big machine somersaulted and sank beneath the waves. The aviators soon came bobbing up and were taken away in a launch, but the accident will not soon be forgotten by those who saw it.

In the 8B grade it will be noted that the range of ability is all the way from 2.8 to 8.0.

Adapting instruction to individuals.—The problem which confronts every teacher is that of adapting instruction to the needs of children who vary so greatly in attainment. The grouping of children into two or three groups for recitation purposes, even though they are all classified as belonging to the same grade, has often proved a satisfactory basis for providing instruction suitable to children of varying abilities. In extreme cases, either of lack of achievement or of superior ability, individual guidance or direction may be required. In another chapter the methods of class organization and the types of program proposed, together with schemes of promotion which take account of variations in ability and achievement, are discussed. It may be sufficient in this connection to emphasize, in the light of the variability which we know to be present among the individuals of any group of children, the necessity for the adaptation of instruction to their varying needs. A school class can never be thought of by an informed teacher as a homogeneous group who can be taught constantly as a class and from whom may be expected an equality of achievement or attainment.

QUESTIONS

1. Under what conditions can the individuals of a group be expected to approach equality in ability or achievement?
2. Define neurone.
3. Name ten original instincts which are the common inheritance of all children.
4. Show, by reference to the individual children in your class, how frequently the instinct for making collections has appeared.
5. To what degree may the teacher profit from a thorough knowledge of the original instincts of children?

6. Can you recall any cases where the proverb, "Practice makes perfect" proved to be false? What reason lies behind this result?
7. What differences exist between free attention, free derived attention, and forced attention? Is it ever desirable to invoke forced attention in the teaching of a class group?
8. What difficulties are involved in adapting school work to the varying needs of children?
9. How important a teacher problem is centered in the concept of the extreme variabilities of children of the same age?
10. To what extent do you find it possible to classify children into the two groups of those who enjoy handling symbols and those who enjoy handling concrete things?
11. Name defects in your marking system which exist because of the failure to recognize the differences in the native abilities of children.
12. To what degree must a "satisfyingness" in the task being done accompany the study which children do in order to make learning effective?
13. If you were to test your elementary class with Tests B, C, and D of the Trabue Language Completion Tests, the average results on three tests could be utilized in determining the variability of the class in respect to the general ability of its members to do school work. Determine whether the results of such a test correlate highly with your own previous judgment.
14. What original tendencies would you try to enlist in the work of teaching beginning reading? State one or two ways in which you would use each.
15. How much can children be expected to learn who "hate" Latin, Algebra, or any other school subject?

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CHAPTER V

TYPES OF TEACHING

METHODS of work in the classroom vary with the ends which a teacher seeks to attain. It may very well be argued that the mental life of children cannot be broken up into types of activity which correspond with particular assignments of work to be done. There is also truth in the statement that those different aspects of mental life which we think of as habit formation, or memorization, or thinking, are, if we analyze the situation carefully, constituent parts of our unified mental life. The fact remains, nevertheless, that the methods employed in teaching do tend to emphasize now one aspect of mental work or control and again another. It is also true that the success which teachers have in securing a desired result often depends upon the mastery of a technique which is peculiar to a particular type of work. It is the purpose of this chapter not to present any exhaustive treatment of types of teaching, but rather to call attention to the fact that variations in methods are called for, and to indicate in broad outline the principles underlying these variations in method.¹

The drill lesson. — The technique of the drill lesson is probably better understood than that of any other type of classroom procedure. The end that is desired is the

¹ For a detailed discussion of the various types of teaching, see Strayer and Norsworthy, *How to Teach*, Chapters 4 to 8, inclusive.

formation of a habit so completely mastered that the particular response desired will be forthcoming whenever the demand for it is made. We sometimes think of habits as matters of skill. One has the habit of using his pen in a certain way, or of putting on his clothing, or of skating, and the like. There are other responses which one is inclined to classify as more intellectual that are just as much a matter of habit as are the skills mentioned above. Eight times seven are fifty-six. The word *believe* is spelled b-e-l-i-e-v-e. The chemical formula for water is H_2O . These are just as much a matter of habit as are any of the responses which seem to involve muscular control alone. In school much of our work has to result in this type of mastery of knowledge. The multiplication tables, spelling, handwriting, the forms that are to be mastered in a foreign language, formulæ in the sciences are examples.

The formation of a habit in any one of the fields indicated depends, in the first instance, upon the clearness with which one sees the end to be sought. There must be no doubt as to the response which is given when the teacher asks that a certain word be spelled, if the right habit is to be fixed. Often the amount of work which pupils are asked to cover operates to prevent their being absolutely certain, as they are called upon to give the response, and thus in turn results in building up habits which interfere with the development of the habit sought. Most teachers need to learn that three or four arithmetic combinations, as many new spelling words, two or three formulæ, a part of a declension or conjugation, mastered without mistakes is very much better than a longer assignment and the resulting imperfection in the responses.

In any event, the desire to form the habit is a most important element in the situation. If children have sufficient motive they will not only master more, but will do the work called for in a shorter time. The devices which children employ in making a game out of word drills, spelling classes, and arithmetic combinations are to be commended whenever they result in a desire upon the part of the children for success. The plan of setting a time limit has merit when it results in having children feel the necessity for concentrating their attention upon the work to be done.

Repetition with attention important in habit formation. — Habit formation depends primarily upon repetition with attention. No amount of repeating will insure success unless the individual engaged in the process of repetition is attending to the work in hand. It is possible to repeat over and over again the spelling of a word or a number combination with the attention fixed upon something else, with the result that after all of the repeating is over the wrong answer will be given. Children need to be taught what is involved in giving their entire attention to the work in hand. Teachers need to be cautious not to prolong the period of drill to a point beyond which children fail to attend. It is not uncommon to find a class in which children attend most satisfactorily for the first ten or fifteen minutes and then there is a rapid deterioration in the quality of their attention. When the teacher notices the failure to attend, one of two things should be done, — either a new element should be enlisted which will attract and hold the attention longer, or else the drill should cease, to be taken up again at another hour or on another day.

It is of the utmost importance in drill work that the teacher be sure that the response is always the correct one. As has been suggested above, it is better to have children spell with certainty two or three words than to give them a long list and to expect a number of misspellings. It is never wise to allow children to guess when we wish to have established a response which is invariable. When one does not know how to spell a word, the thing to do is to get it from the teacher or to look it up in a dictionary. This word should then be made the subject of special study. One of the very best methods of teaching spelling is to build these individual lists of words which have presented difficulty to the individual pupils. In like manner, arithmetic combinations, word forms in foreign languages, formulæ in science, and the like, should be recognized as known or unknown. When they are not known, the teacher should encourage the children to look them up to get the correct form and then to master them. There should never be any toleration of mistakes. There will be enough of them without the teacher's encouraging them.

The place of review — over-learning. — There is peculiar virtue in review in the field of habit formation. The drill which seems to fix the response to-day will be found insufficient when the same response is called for six months later, unless systematic reviews have been arranged in the meantime. There is nothing more important than an appreciation of the necessity for over-learning. The multiplication table which a boy seems to have mastered to-day will need to be reviewed to-morrow, and next week, and next month, and even next term, before one may be entirely

satisfied that it is fixed, and so for any other habit which we hope to have our pupils master. Systematic reviews throughout the year, and from grade to grade in the elementary or high school, will often provide against the condemnation of the work done in the grade below which one so often hears from teachers.

Memorization. — The process of memorization is very closely related to habit formation. The new element which enters is that of the logic of the situation. Where we seek to secure responses, each of which is to be independent, we have the typical habit formation situation. When we hope to have recalled a train of thought, we have the problem of memorization. In either case what is sought is an exact reproduction of the response originally presented for mastery. One is entirely justified in the field of habit formation in disassociating the several units of a whole which can be thought of as belonging together. For example, it is probably just as well to learn a multiplication table without any definite number as it would be to learn it in the form in which it is ordinarily printed in a book. In the memorization of a poem, however, it is important that the association of ideas, beginning with the first word of the first line to the very end of the selection, be reproduced in exactly the order in which it appears in the book.

Memorization involves repetition with attention. The important element in the situation is thinking through from beginning to end the thought of the author whose words one seeks to memorize. There is involved primarily the association of ideas so that the first idea leads to the second, the second to the third, and so on through the series. There are, of course, as a rule, a few main thoughts which stand

out in the selection round which the other ideas may be collected. In thinking through a process or a poetical selection, these main thoughts need to be emphasized so as to help to carry the thought, step by step, through the selection.

Children seem naturally to employ the wrong method of memorization. Nothing is more common, when the teacher asks them to memorize, than for children to repeat the first line or sentence, and then the first and second, and then the first, second, and third, and so on, until they have mastered the whole selection. The difficulty with this method is that it tends to emphasize the mere repetition of words, and not the ideas which are to form the basis for recall. All of the evidence that there is available tends to show that the reading through of a selection, and the picking out of the main thoughts in it, followed by further reading through the whole with emphasis on the main ideas, forms the most sound basis for memorization. It may be necessary in a long selection to take the first main thought and to center on that division until it is mastered, and so for the second, third, fourth, fifth, and the like. This method might be described as a method of learning by wholes, modified somewhat by a method of learning by parts, which are determined not by number of lines, by stanzas, or by paragraphs, but by the logic of the thought. This whole and part method involves in every case the reading and thinking through the whole before the several important parts are separated, and the return to the whole from time to time in order to keep in mind and to build up the association of ideas which will insure recall.

In order to get the particular phraseology of a selection

to be memorized, it is necessary for children to have pointed out to them the niceties of expression which make a particular selection worthy of memorization. We memorize a poem or a prose selection because the author has expressed the ideas contained in it very much more adequately than any of us could do. When one gets these ideas just as the author has expressed them, he must of necessity use the words that the author used. It is worth while for the teacher in reading through a selection before a class to call attention to those particular phrases or words which give to the selection its peculiar quality. When children learn to memorize by thinking through a selection and by appreciating a refinement of expression used by the author, they will come to think of memorizing not as a drudgery task of repetition, but rather as a result of understanding and enjoying the selection which they are asked to memorize.

The lesson for appreciation. — Lessons for appreciation should find a place throughout the school system. We have concerned ourselves so much in the past with the formation of habits and with the acquiring of knowledge, that we have often neglected appreciation. One might think sometimes that the sole business of the school is to equip children with the tools which will enable them to make a living, and that it has nothing to do with the development of those appreciations which would enable children to enjoy life. In the field of æsthetic appreciation, involving literature, music, and art, much remains to be done by way of providing adequate courses of study and a satisfactory technique of teaching.

No teacher may hope to have children grow in power to appreciate poetry, music, or pictures, who does not himself

enjoy and appreciate the form which he seeks to present for their satisfaction. A teacher's power of appreciation, and his power of interpretation, are fundamental to the development of appreciation upon the part of children. If a teacher cannot enter into the spirit of a poem or a story, much as he hopes to have a child enter into it, there is little use of his presenting it for consideration of the children. Unless one can become enthusiastic over the description of the beauties of nature which the poem embodies, unless he feels the thrill which he hopes to have the children get, he might better not read that particular poem to the children. If one is less than sincere in his acknowledgment of the beauty of a picture, it will never pay to call upon children to respond to the picture by asking them to declare it beautiful.

Growth in power of appreciation. — Children should not be expected to arrive suddenly at a power of appreciation which will enable them to accept adult standards. Growth in power to appreciate is like growth in any other field. Children move from a level in which they appreciate that which is crude and for adults uninteresting or unlovely, to the power of appreciation of those things which the most highly trained individual calls beautiful. When children are quite honest they enjoy pictures with plenty of color more than they enjoy the wonderful reproductions of masterpieces which are furnished for them in the beautiful brown tints characteristic of so many of the pictures on classroom walls. Most boys and girls like the popular songs or the folk songs more than they like grand opera. The interesting fact is that for boys and girls who get real joy out of bright pictures and folk songs there is a greater

possibility of growth in power of appreciation which will finally lead them to an understanding and appreciation of the masterpieces, than there is for the child who is willing to stultify himself by declaring beautiful that which is presented to him by an adult, even though he gets no satisfaction out of it. That teacher is skillful who is able, by his power of interpretation, to gain spontaneous approval from children. A teacher is never wise who demands that children accept the standard which he proposes, and that they hypocritically declare beautiful that which they do not enjoy.

The importance of having children choose. — It is often wise to propose to children that they choose from among several poems, several pictures, or several musical selections, the one which they like best. The feeling that one has chosen for himself often results in an attitude toward the poem or picture or song selected which tends to develop satisfaction in it. Boys and girls of different intellectual maturity, of vastly different home surroundings, and who vary in artistic ability, will never be equally well satisfied by a single artistic form. The wise teacher will seek to select that which appeals to boys and to girls, the simpler and more complex form, all with a view to giving satisfaction to all of the children in his class.

The place of technique. — We have sometimes destroyed the possibility of satisfaction in the field of æsthetics by insisting upon the mastery of technique involved in creating the artistic form. Music has sometimes been spoiled for children because their main contact with it has been in terms of seeking to master the technique of reading music, or of playing on an instrument. The technique involved in the production of music, in the painting of pictures, and

in the writing of poetry, should be mastered by those of unusual ability in these several fields. For all others the technique should be subordinate to the joy and satisfaction which may come to those who have a very limited mastery of technique but who get great satisfaction in hearing or seeing the forms as they are presented. It will not be misleading if we think of a large majority of children as consumers, rather than producers, in the field of æsthetics.

Creative work by children. — Possibly the greatest good which comes from the mastery of technique is where groups of children, varying in their power of appreciation and command of technique, work together to produce that which may have some artistic value. A group of children working together for the development of a tune for a song, the words of which they fully understand, may not produce the best tune, but they will get something more of appreciation of music in relation to the words which the music is to interpret than they would if they have never had this experience. The attempt to express in poetic form an experience common to a group of children may not mean the development of very valuable poetry, but it will result in something of the appreciation of the methods by which poetry is developed, and may mean a higher degree of satisfaction in the poem of unusual artistic work. We can never expect many children to have very great ability in drawing or in painting. It does, however, pay to try to have them express themselves and to criticize each other's productions, to the end that they may have a higher appreciation of the work of a master in this field. There is danger, of course, that creative work may be overemphasized. The criterion to keep in mind always is the joy that the children get

out of the work, rather than the product. If we can learn that there is a place in our schools for developing a taste for poetry, music, and pictures, a satisfaction in contact with these artistic forms which will lead children to desire them after they leave school, we will have done much to insure the proper use of leisure time after school days.

Appreciation broader than æsthetics. — In using the term "appreciation" in relation to æsthetics, one should not lose sight of the fact that it has a wider implication for teaching. Everywhere boys and girls, when they come in contact with enthusiastic teachers, learn to appreciate the achievement of men in the fields in which they study. The logic of mathematics, the completeness of a scientific piece of research, the wonder of the investigation in the field of animal life, or of the exploration of unknown lands, may make an appeal and arouse an appreciation which will determine the career of some boys and girls. The interpretation of personalities which may well include the heroes of peace as well as of war, when presented by a sympathetic teacher, may awaken ideals and purposes not less significant for the lives of boys and girls than are the special skills and knowledge that the school seeks to provide for them. Teachers in all of our schools succeed, in considerable measure, when they are enthusiastic, and when they have the power to pass on to their pupils the enthusiasm which they feel for the subjects which they teach and the personalities which are associated with their work. A good teacher must continue to share the enthusiasms and ideals which are sometimes thought to be the characteristics of youth.

How teachers may stimulate thinking. — One of the

most difficult demands made upon the teacher is that of stimulating thinking upon the part of his pupils. It is relatively easy to command and to secure results in habit. Teachers have always found it possible to have children report to them from the books which they have read, or the lectures which they have heard. The intellectual life of boys and girls, in so far as it involves thinking, in many cases finds little opportunity for growth in the classroom. Possibly the greatest reform that is to be brought about in teaching is one which will provide for the solution of problems which boys and girls consider worth while as a regular part of their school work, in place of the more or less dreary repetition of ideas which they have gathered from books.

The place of the problem. — If thinking is to be stimulated, teachers must discover to children problems which interest them. A teacher of nature study in the first grade may require children to remember a great many facts about a pet cat, but if he wants them to do any thinking he will need to challenge them by asking how the cat takes care of itself, and what they should do in caring for the cat. In the upper grades of the elementary school, in the beginning work in general science, laws and principles may be explained and learned, and little thinking be required. A teacher who sets boys to work in the application of these principles by studying the ventilation of their homes or of a school building, in the construction of a boat, or of the simpler electrical appliances, may not only stimulate thinking but give to the pupils the very best proof of the validity of the thinking which they have done. In history it is worth while to propose a problem which can be satisfied

by going to sources which a teacher can make available in order to reach a conclusion which can be established as sound.

Teachers must learn to throw a larger responsibility upon children if they are to expect them to do any significant thinking. The demand first of all needs to be that the problem be definitely stated and that it be kept in mind. In order to think clearly one must be able to reject suggestions which come, as well as to gather information which will aid in the solution of the problem. This rejection or selection of materials can only be accomplished when the problem in hand is perfectly clear. For children it will be necessary to repeat again and again the problem and to seek to discover what progress has been made in its solution.

Correct relation of knowledge and thinking. — Thinking can be done only by one who has the necessary facts in hand for the solution of his problem. As has been suggested above, we have often required pupils in our schools to recite for us information contained in books, without asking them to do any thinking. Books, magazines, experiments, and observations furnish the necessary basis for thinking. A skillful teacher will not only discover to children the problems which challenge their interest, but will also guide them in the collection of the information which is required in thinking through the situation. No child should complete his elementary school course without considerable experience in the gathering and organization of data necessary for the solution of the problems in which he has been interested.

Thinking and reasoning contrasted. — Teachers should distinguish between thinking and reasoning. All reasoning

involves thinking, but thinking may not be identified with reasoning, except as our thinking deals consciously with laws and principles. Reasoning is distinguished, as well, from thinking by the presence of the definite technique of induction and deduction ; not that one is present and the other absent in reasoning, but, rather, that one more than the other is emphasized in a particular situation. In induction we start with a problem that is found in a lack of satisfaction in a generalization. We seek to correct or modify the generalization, and for this purpose bring together all of the evidence that is available for the sake of formulating a generalization which will prove entirely sound. After the generalization is formulated, we seek to apply it, or to test it in order to establish its validity. This process is called induction. In deduction we start with a problem found in a situation which we wish to refer to the law or principle which will explain it. The process here is one of seeking, among the many laws or principles, the one which fits the particular situation. After we seem to have found the law or principle, we again seek to verify it by applying it to parallel cases until we are assured of the application of the particular law or principle to the situation which we have sought to classify.

Induction and deduction. — It would be a mistake to consider the processes of induction and deduction as separate and distinct. Induction is not complete without deduction. The testing of the validity of the generalization which we arrive at by induction is found in the attempt to classify under it a great variety of particular situations with which we are acquainted. In deduction the law or principle comes in time to be modified as we seek to classify

under the law the particular situations which arise. Dewey describes this interaction by saying: "There is a double movement in all reflection: a movement from the given partial and confused data to a suggested comprehensive (or inclusive) entire situation; and back from this suggested whole — which as suggested is a meaning, an idea — to the particular facts, so as to connect these with one another and with additional facts to which the suggestion has directed attention."¹

However true it is that the one process is, in a sense, intermingled with the other, the fact remains that in any given case the major movement is in one direction or in the other. As a child formulates a rule for a process in arithmetic upon the basis of practice in solving examples which he knows to have resulted in solving the problems presented, the reasoning process is predominantly induction. When he classes a certain word in a sentence as an adverb, or when he calls a certain area a coastal plain, a certain problem one in percentage, he is using deduction.

The open-minded attitude. — In all the work which involves thinking, it is of the utmost importance that we preserve upon the part of pupils, in so far as it is possible, an open-minded attitude. It is well to have children in the habit of saying, with respect to their conclusions, that in so far as they have the evidence, this or that conclusion seems to be justified. It may even be well to have them reach the conclusion in some parts of their work that there are not sufficient data available upon which to base a generalization, or that certain principles which are accepted

¹ Dewey, *How We Think*, p. 79. Copyright by D. C. Heath & Co., N. Y.

as valid by some thinkers are questioned by others, and that the conclusions which are based upon principle which are not commonly accepted must always be stated by saying: It follows, if you accept a particular principle, that this particular conclusion will hold.

"We need more and more to encourage the habit of independent work. We must hope as children pass through our school system that they will grow more and more independent in their statement of conclusions and of beliefs. We can never expect that boys and girls, or men and women, will reach conclusions on all of the questions which are of importance to them, but it ought to be possible, especially for those of more than usual capacity, to distinguish between the conclusions of a scientific investigation and the statements of a demagogue. The use of whatever capacity for independent thought which children possess should result in the development of a group of open-minded, inquiring, investigating boys and girls, eager and willing in confronting their common community problems to do their own thinking, or to be guided by those who present conclusions which are recognized as valid. They should learn to act in accordance with well-established conclusions, even though they may have to break with the traditions or superstitions which have operated to interfere with the development of the social welfare of the group with which they are associated."¹

¹Selection from Strayer and Norsworthy's *How to Teach*, pp. 123-124; used by permission of the Macmillan Company, publishers.

QUESTIONS

1. What elements are involved in habit formation?
2. In what subjects is it essential that the drill type of teaching be utilized in considerable degree?
3. To what degree can you justify the devices which you are using in the teaching of arithmetic?
4. It is assumed that no teacher teaches without recognizing certain laws of learning. What laws of learning underlie the instruction which you give?
5. What advantages are gained in the learning of poetry from "memorization by wholes"?
6. What lessons for appreciation have you taught during the past month?
7. Rank the following elements of the thought type of lesson in the order of their importance as aims of such a recitation :
 - (a) Pupils asked questions of each other.
 - (b) Pupils challenged the conclusions or statements of classmates.
 - (c) Pupils defended their position against objections or suggestions of doubt.
 - (d) Pupils addressed their remarks to class rather than to teacher.
 - (e) Pupils worked on a significant problem as the unit of instruction.
 - (f) Pupils seemed well grounded in previous work.
 - (g) Pupils were held accountable for due performance of assigned tasks.
8. What analysis of thought is made by Professor John Dewey? Illustrate with examples from your own thinking.
9. What value has an examination? In the last examinations which you required of your class what purposes predominated?
10. What weight in the determination of the promotion of children should be given the marks made by children in examinations?
11. Contrast deductive and inductive thinking.

12. Analyze the types of teaching which form a part of your work on any one single day.

13. What is meant by the "project" method of teaching?

14. In planning the lesson to be taught in any subject, it is advantageous to write down a number of the questions which you expect to ask the class. What qualities will "good questions" have?

15. Can any uniform standards be established for judging the various types of teaching? List any standards which apply equally well to the drill lesson and the lesson for appreciation.

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CHAPTER VI

TRAINING FOR CITIZENSHIP

THE purpose of education is to develop sympathetic, intelligent, active citizens of our democratic society.

The discipline of the schoolroom, and the moral training which is provided for children in school and at home, are significant to just the extent to which they contribute to this end. It is necessary to distinguish among children of the different age or grade groups, in terms of their ability to understand and appreciate their responsibility to the group of which they are members. It will never do to assume that moral training or preparation for citizenship can be placed on exactly the same level for children in the lower grades of the elementary school and for the boys and girls of the high school. A further distinction will have to be made, within any class group, among the individuals who compose it. Some children mature very much more rapidly morally and are able to assume a larger degree of responsibility than are others of the same age.

The bases for moral action. — It is important to realize that morality is not something separate and distinct from the mental and physical life of boys and girls. There is a basis in the instinctive equipment of children for the development of moral action. The instinct of kindness, the dislike of scorn, and the satisfaction which comes from approval may be utilized as a basis for securing the right sort of conduct. Other instinctive tendencies may oper-

ate to interfere with the normal moral development. The tendency to bully, an overdevelopment of the fighting instinct, the desire for ownership, and the spirit of rivalry may lead to most undesirable sorts of conduct, and may finally be responsible for immoral conduct. The habits which are formed at home and at school are important in the minds of those who pass judgment upon the conduct of boys and girls, or to the men and women whose childish habits persist. One's intellectual ability, the power to make the distinction between that which is for the good of the group and that which lacks any such significance, will determine in considerable measure the real moral standards of the individual. The ideals or purposes which children acquire in association with parents, with friends, and with teachers have much to do with the standards which come finally to be accepted.

Non-moral and moral conduct. — It is important to distinguish between conduct which is non-moral and yet entirely acceptable and conduct which is truly moral. Children may, under suitable direction, acquire habits which are most desirable from the standpoint of the social group and yet may never have faced a moral issue. Well-established habits of cleanliness, promptness, obedience, and the like, may be developed and yet there may be little or no truly moral conduct by the particular individuals showing these desirable traits. It is only as one raises the question of the significance of his conduct for the group of which he is a member, only as he definitely understands the significance of his action and determines to do what is right, that we have truly moral conduct. It is important to emphasize the fact that morality is a matter of action.

Boys and girls, as well as their elders, often profess interest and enthusiasm for types of conduct which are truly moral, and then neglect to put into action the precepts or ideals to which they give intellectual assent. There is no greater fallacy than that involved in the statement that to know right is to do right.

Stages of moral development. — While no sharp line of division can be drawn which will separate children of one age group from another with respect to moral conduct, it may be declared that most children up to twelve years of age need primarily to be given such training as will establish habits that are socially desirable. These habits, in considerable degree, are forced upon them rather than chosen by them. The desire to please, the dislike of reproof or scorn, and even the fear of punishment, may operate to establish habits which will last during the whole of life. Conduct of this sort is non-moral, but it is nevertheless of the greatest importance from the standpoint of one's later efficiency as a citizen. It is very important that the so-called school virtues of punctuality, obedience, industry, regularity, and courtesy be made the habitual method of response by boys and girls in the elementary school.

In the desire to develop truly moral conduct, which inquires concerning the reason for action in the lives of boys and girls, some theorists have felt that children should never be required to obey without having the situation developed for them on an entirely reasonable basis. It will be well, whenever reasons are sufficiently simple to be understood by children, to call their attention at the beginning of the formation of a particular habit to the

meaning of the type of conduct which is desired. It will not ordinarily be possible, however, to continue to explain on each occasion the reason for a particular type of action. It is even possible that children may not appreciate the moral significance of punctuality or of regularity. It is nevertheless important that these habits should be developed, and it is the business of the teacher to see to it that they are. We do not commonly find it possible to explain the necessity for obedience to law on every occasion confronting an adult when he would prefer to disobey. We have to take it for granted that laws have been enacted and are enforced because the majority of the group believe that they make for the common good. We find it necessary to exact obedience. In the great majority of cases, if not in all of them, for children under twelve years of age, obedience to a command by a teacher or parent should be the rule. The suggestion is not that teachers should bully children, or that they should fail to try to understand the child's point of view and to explain situations to him, but rather, that the most sympathetic teacher, seeking to mete out the most even-handed justice, will need on many occasions to give a command and to expect to have it obeyed. It is certainly true, as has been suggested above, that in the world outside of school, restraint must be exercised, and certain types of action must be engaged in, by those who would establish their right to the title of good citizens.

At about twelve years of age, a little earlier for some children and a little later for others, there begins a period of intellectual and physical maturity which calls forth in the boy or girl the desire to assume personal responsibility for his actions. This is the time when wise teachers will

ask these children to inquire carefully concerning their habitual conduct and to accept particular habits as making for the common good or opposed to social welfare. It is to be hoped, of course, that most of the habits which these children have acquired may be classified by them as worthy. This is the period, too, for the development of social ideals. Between twelve and eighteen years of age most boys and girls may be appealed to by those ideals which make for social betterment. The enthusiasm of youth for reforming the world is proverbial. A wise teacher will seek to find opportunities for the carrying over of the ideal which is conceived in the actual practice. There is a real danger in allowing children to dream of great good to be accomplished without their actively participating in work which makes for the common good. This period is essentially a period of developing one's philosophy of life and of having boys and girls come to understand the responsibility of the individual to the group.

Intellectual ability and morality.— In the discussion of intellectual development it has been pointed out that the limit of an individual's achievement is determined by the sort of nervous system which he inherits. There is a sense in which one's native equipment determines the height to which he will rise in his moral life. Great achievements for the common good which are, of course, the embodiment of the highest type of moral conduct, may not be expected of those who have little ability to understand social conditions, or to interpret the problems which confront the group. There is, however, another side to the question. The common virtues which make one a desirable citizen are available for the very great majority of

men and women. It is only in the extreme case of mental deficiency or of physical degeneration that we need despair.

The effect of environment. — The environment in which boys and girls live has much to do in the establishment of their habits of conduct. We know from our reading of history that the standards acceptable to the group have varied from age to age. There was a time when it was considered highly moral to tell the truth to your friends and to lie to your enemies. It is suggested in the modern world that truth-telling is a virtue to be exercised not only by individuals but by nations as well. Not more than one hundred years ago, even overindulgence in alcoholic beverages was passed without comment. Our modern moral standards suggest the necessity for temperance from the standpoint of one's physical and intellectual efficiency as they affect not only the individual but the group. In like manner, differences that are quite as striking can be found among different groups in the same city or state. The problem which the teacher has to handle is often extremely difficult on account of the varying standards of group ideals with which the children come to school.

Where the standards of a particular boy or girl or of a group of children are low, teachers have found it advantageous to secure an acceptance of the higher standard by the leader of the group. There is nothing quite so compelling in the lives of children as the desire to be like those whom they admire. The real leader among the group of boys or girls may do more to raise standards than all of the preaching that is done by a very conscientious teacher. A teacher who does not awaken repugnance by an over-emphasis of his own virtues may actually find

children imitating him because of their desire to be like this individual who stands in a position of power and leadership in their social group.

It will always be important for teachers to be concerned about the moral standards with which children come in contact on the street, in the picture shows, and in other social gatherings. It often happens that the ideals which are held before children at school give way under the influence of a degrading environment which is present more hours of the day outside of the school. Teachers need to appreciate the fact that their control of children, and the impression which they leave with them of the right type of action is, in considerable measure, determined by the consistency of their own conduct. A teacher who is in ill health, and who has become extremely nervous and irritable, may not expect to develop the social virtue of kindness and tolerance among the children of his class. Nagging at children, inflicting corporal punishment as the remedy for every fault, and giving children a feeling that they are treated unjustly, will ordinarily tend to develop an anti-social attitude in the minds and in the actions of boys and girls.

Corporal punishment. — The question of corporal punishment is one that has been discussed from time immemorial. In the olden days all infraction of law or of social custom was punishable by varying degrees of corporal punishment. The whipping post, the stocks, and the gallows were considered the important instruments of society for its own preservation and for the development of moral conduct upon the part of those who had violated the law. We have come to understand that, for the most

part, these punishments failed to effect the cure which they were supposed to provide. There is reason to suppose that immature children may respond somewhat more satisfactorily to corporal punishment than do adults. The difficulty in the situation is that the undesirable response may be inhibited for fear of the pain, and yet the individual's anti-social attitude be left untouched. It is certainly safe to say that only in most extreme cases should corporal punishment be resorted to in the school. If it were always possible to place children under control in such a manner as not to interfere with the welfare of other children, in a special class, or a special school for delinquents, it would certainly be found in the very great majority of cases to be a more satisfactory method of procedure than indulgence in corporal punishment. Where such provision is not made, or for the extreme cases where a boy or a girl sets himself absolutely against the authority of the teacher, corporal punishment may be resorted to only under most carefully planned conditions. A child should never receive corporal punishment in the presence of other children. The case should be clearly understood by the child and by the teacher. There must be nothing of anger or resentment in the attitude of the teacher if the punishment is to accomplish any good. In schools where there is a principal, it is probably best to refer all such cases for his consideration. There should, of course, be no punishment inflicted which would make for any permanent injury to the body of a child.

Choice is involved in the truly moral act. — It will pay, even for children who are not mature intellectually, to reason through a situation in which a child has engaged

in non-social conduct, and to ask him to consider what he ought to do in the way of providing a remedy. In a certain city elementary school recently a big boy fell out of line at the time of exercise in the yard and told his teacher that he belonged to the group of those who refused to take orders from anybody. This teacher might have insisted that the boy was in open rebellion. Instead of that, he told him that the school system provided two kinds of schools, — the one where boys came to school at nine o'clock in the morning and were dismissed at three o'clock in the afternoon, and where they did what the teachers asked them to do, and that there was another type of school where boys were sent twenty-four hours in the day and seven days in the week, because they were unwilling to work with other boys and girls and with their teachers in the first type of school. He was told that in this second type of school he would be given an opportunity for work outside of the usual classroom hours, but that he would not be allowed the freedom which he enjoyed in attending a school where he was then enrolled. The boy was led in this way to a conclusion which he expressed as follows: "If you will excuse me for failing to obey, I will do what you tell me hereafter."

The mistakes which children make may, as a matter of fact, often provide the situation which is necessary for the development of right social attitudes and of truly moral conduct. A teacher should more frequently seek to place the responsibility, especially with older children, upon them rather than attempt to deal with it as though the situation involved only the meting out of a suitable punishment. Teachers are not autocrats, and children should

never look upon them as such. It will change many a boy's point of view if he is asked by a teacher to tell what he is going to do to set himself right with the group. It will be discovered often that he has expected to have considerable satisfaction, either in accepting the punishment that the teacher offers, or that he is called to enter into a contest of wits with the teacher and to see whether or not he can escape the punishment which he believes the teacher will wish to inflict. The situation is quite different when the teacher insists that the responsibility belongs with the pupil.

Physical condition and behavior. — Children are misjudged at times by teachers who are not sufficiently sensitive to their physical condition. One may question whether any except the very capable boy or girl can be a good citizen if he is suffering from eyestrain. Children who have not had enough sleep, who because of adenoids are habitually under the necessity of breathing through their mouths, or who suffer because of infected tonsils or decayed teeth, ought not to be classified with children who in normal physical condition engage in exactly the same type of conduct. The irritability of one who is not well will result often in a type of action which is most annoying to other members of the group but which is not engaged in in any malicious spirit by the one causing the trouble. In an inquiry that was made concerning children who were suffering from eyestrain, it was discovered that after proper lenses were provided their record for conduct improved very remarkably. A similar improvement has often been known in the cases of children who have had adenoids or tonsils removed and have returned to normal health.

Pupil self-government. — In many schools, schemes of pupil participation in school government have been organized with the definite purpose of training for citizenship. There is danger that there may arise a confusion between the fact of a dramatization of governmental activities and significant training for the duties of citizenship. It is quite possible for one to understand and to participate in the organization of a governmental body composed of police, street-cleaning, fire departments, and the like, and still to have very little, if any, realization of the obligations and duties of the citizen. We do need to have children understand our institutional life, and there is a real value, especially for upper grade children in the elementary school or for high school children, in having them dramatize the forms which we provide for the carrying on of government. It is possible, of course, in such a scheme, under the direction of a wise teacher or principal, to introduce the ideas of responsibility and of coöperation characteristic of good citizenship. It is important, however, not to be satisfied with the form, and it will probably be necessary to think quite as seriously of the problem of training for citizenship outside of the time devoted to the activities of the pupil government organization as during the time given to this field of work.

School routine. — The control of a class can never be entirely handed over to boys and girls. In order to get done the work which the school is organized to do, the teacher will need to exercise control which children may more or less imperfectly understand. There must be in any well-regulated school certain matters which are reduced to routine and which call for immediate obedience

by all children. When boys and girls are to be sent from one room to another, it is best that they move in a more or less definite order rather than that they group themselves in a single aisle or at a door, with the confusion which almost inevitably results. There is a nice balance in a situation like this between the military precision which some would prefer and the lack of control which is characteristic of those who fear to place restrictions upon the actions of children. The writer would not have children move through a building in rigid lines and marching to music. School pupils can easily understand that the group should move in an orderly fashion on the right-hand side of the corridor, and that they should go promptly from one place to another. In the passing of materials in a classroom it is necessary, if time is to be conserved, to have children habituated to a particular method of procedure. The placing of materials on the front or rear desk, with the instruction that they be passed by each pupil to the pupil behind him, or that the pupil in the front or the rear desk move quietly along the row handing each pupil his materials, is sound school management. In the case of a fire drill, it is of the utmost importance that every one move with precision, and yet without haste, over a route which is prescribed to a destination which is set for him.

The development of self-control. — The ideal management in relation to training for citizenship is the management which will develop self-control. There are occasions in every school where pupils should be expected to act on their own best judgment. A teacher should seek to build up this feeling of responsibility among the pupils in his class. A boy or girl should be proud to be sent with-

out instructions to the library to read. It should ordinarily be possible to have them consult books that may be available in the room without asking for permission. It will help when they understand that they are expected to be in their places at the beginning of any session, seated and ready to work when the signal to begin the session is given. In order to help them it will be necessary to give a warning signal some five or ten minutes before the session begins. It is certainly unnecessary, however, for children to be assembled in lines in the yard and marched into the classroom in order to be sure that they are all ready for work at a given time. Many other illustrations of self-control and of the possibility of development in this direction will occur to any experienced teacher.

The importance of discussion. — The good citizen needs to be able to discuss issues which arise with his fellows in an open-minded manner. Much gain will come from the organization of class work in a way which will permit of discussion by children. For older children it will be possible to place them in small groups where they may, in coöperation with each other, prepare certain definite assignments which have been made before coming to class to report their findings to the group. We need more of the idea of responsibility for progressive development in the minds of boys and girls with respect to the intellectual work of the school. A recitation should be the right sort of social situation. All too often it is merely a place where the autocrat, called the teacher, calls upon his subjects, the pupils, to prove their right to receive his gracious favor.

Children as good citizens. — We need to develop with our pupils throughout the United States the idea of partici-

pation in those activities which make for the common good. Many boys and girls have learned the significance of saving. For some of them the social desirability, as well as the individual satisfaction which comes from saving in order that one may insure his future, has been made clear. For older boys and girls there may even be some appreciation of the anti-social significance of waste and extravagant expenditure. Schools should teach the principles of thrift, and develop with children the social significance of saving. The work of children with the Red Cross is another field which offers continued opportunity. A good citizen recognizes his responsibility to those who are less fortunate. The methods of relief undertaken by the Red Cross should be understood by boys and girls. There should be undertaken the type of teaching which will emphasize the desirability of keeping all our people independent and the danger of pauperizing them through indiscriminate giving. The work of the Red Cross involves the participation of hundreds of thousands of children in providing for the unfortunate, the basis upon which they reestablish their independence. This giving of time and money and effort in order to help others may be worked out through the local charity organization, or through the Red Cross, when appeals are made on account of catastrophes which will unfortunately continue to occur.

Good citizenship and work. — A good citizen makes his own way. Boys and girls need to learn what it is to work. The school garden and the Boys' Working Reserve movements have been most valuable for many boys and girls because they have established a relationship between work and the resultant product which was entirely absent in

their experience. Every boy and girl ought to learn what is involved in physical labor. It is not enough that they use such intellectual equipment as they have. We need in our society a better understanding and appreciation of the lot of the laborer. We shall never be able to solve the problems involved in the relation of capital and labor until the laborer becomes to some degree a capitalist, and until those who work with inherited capital have a better appreciation of what is involved in work.

Children as community workers. — In many communities children have secured valuable training in citizenship by undertaking work which makes for civic improvement. Cleaning up back yards, beautifying waste plots of ground, community gardens, and the like, have been undertaken by children to the great benefit of many communities. The best thing about the situation is their learning of the meaning of coöperation for the common good. In like manner, under wise leadership, children have in many cases improved the school building and surroundings. A boy or girl is a good citizen who looks upon the school property as something to be taken care of and beautified. The development of social centers, in which both parents and children participate, and which have their various activities located in the school building, has in many communities provided the opportunity for growth in the feeling of social responsibility.

Teachers with the right sort of social ideals may be expected to do much for the training of good citizens. The participation of teachers in those activities which make for the common good, even outside of their professional work, will have its influence upon children. A

good-natured teacher, with a judicious temper and with skill in teaching, will do much to develop boys and girls who will know how to behave both in school and out of it. There is no other obligation which rests upon the teacher with so great a weight as that of developing boys and girls who, in both thought and practice, find their greatest satisfaction in contributing to the common good.

QUESTIONS

1. What rôle does the instinct of desire for the approval of school-mates play in the actions of a boy?
2. How may the tendency to bully be directed into constructive channels in the control of children?
3. To what degree may instruction in morals of a direct nature be made effective?
4. What percentage of the cases of corporal punishment brought to your notice has accomplished the purpose for which such punishment was administered?
5. In what way do good stories made available in children's reading help in character building?
6. In what sense is it possible for the same act to be immoral, unmoral and moral for individuals living under differing circumstances and in different social groups?
7. In what sense is it true that lapses from moral conduct are the teacher's best opportunity for moral teaching?
8. Through what agencies has the moral code of your community been established? Does it differ from the moral code of any other community which you know?
9. In what way may a "School City" fail in teaching children to become good citizens?
10. To what degree can boys and girls be trained to assume the responsibility of control of a school organization?
11. Define the relationships which should exist in a classroom between teacher and pupils.

12. What are legitimate methods of developing "school spirit"? What part may "school spirit" have in creating among pupils good ideas of citizenship?

13. What particular training are the children of your school securing which will make them desirable citizens in a democracy?

14. What kind of future citizens may be expected to come from the school, teachers of which personally fail in fulfilling their citizenship obligations?

15. Should teachers who are not American citizens be permitted to teach in our schools? Why?

REFERENCES FOR READING

- Bennett, School Efficiency.
- Dean, Our Schools in Wartime and After.
- Dewey, Schools of To-morrow.
- Dewey, School and Society.

CHAPTER VII

TEACHING CHILDREN TO STUDY

THAT teacher has done most for his pupils who has succeeded in teaching them how to study. One may successfully drill pupils so that they can respond in particular situations; he may equip them with a certain kind of knowledge; he may even have them enjoy to a certain extent literature, music, or art, because of his power of interpretation. But one's real success is found in the ability of the boys and girls who have been taught to work independently after school days are over. Do pupils know how to form habits? Have they learned how to gather data necessary for the solution of a problem? Are they critical of their own conclusions? Do they call for verification of the statements which are made by those who would assume to solve social problems? These are the criteria by which a teacher should judge his success.

One's physical condition important. — There are many conditions making for success in study which lie outside of the field of one's intellectual equipment. Children need to be taught that one does not study to best advantage if he has not had enough sleep the night before. There is so little understanding of this need among parents as to deprive children in elementary and high schools of the rest which is necessary for mental or physical activity of the most efficient sort. There is no ironclad rule which can be laid down, but it might be stated with no fear of

contradiction that children in the elementary school should have from ten to twelve hours' sleep daily, and that most high school boys and girls would profit by having as much as nine hours' sleep each night. It is important, as well, that boys and girls realize that over-eating interferes with intellectual activity, that it is not best to expect to do intellectual work after eating a very hearty meal. For older boys and girls, and more especially for their parents, the importance of caring for the teeth, of having lenses provided if one's eyes test less than normal, and of having the minor operations necessary for the removal of adenoids or infected tonsils, should be recognized as definitely related to efficiency in mental work. One who must constantly breathe through his mouth, or who is unable to masticate properly his food, or who suffers from eye-strain, may not be expected to study, regardless of his command of the technique involved.

It will be necessary to explain to boys and girls the necessity for exercise. Among the very studious children will often be found those who spend their time so continuously with books that they become less, rather than more able to do intellectual work, for the very reason that they spend all of their time in this endeavor. It is possible to make clear, even to children, the importance of play, out of doors, when possible, as a means of putting one in condition for good mental work. Of course one has to caution against physical exhaustion, for one may never expect to do efficient mental work when worn out physically.

A place to study. — Teachers should be interested in the conditions surrounding children when they attempt to study their lessons. The rule for silence in the study

hall, or in the classroom, when pupils are trying to study, needs to be carried over into the homes where children are expected to engage in mental work. If homes in a particular community do not offer opportunities for children to work free from distractions, it is the duty of teachers to arouse the community to the necessity of providing study rooms in school buildings, settlement houses, and the like, where children may work under conditions which make for efficiency. Quiet, a sufficient light, without the glare that causes eyestrain, a temperature of from sixty-five to sixty-eight degrees, a chair and table, or desk, where one can have his materials, are almost as essential for one who would learn to study effectively, as are the problems that have been presented for solution and the motives which have been set up by the skillful teacher.

The motive for study. — If boys and girls are asked to study, the teacher has the obligation of discovering to them a sufficient motive for the work which is to be undertaken. The command to do a piece of work in order to satisfy a teacher is never a satisfactory motive. Study which is undertaken in order to avoid the discomfort which is involved in being subject to the scorn of a teacher, or from the punishment of being kept after school, may never be expected to result in satisfactory habits of study. It is difficult to find satisfactory motives for all of the work which we ask children to undertake, but this is the standard which teachers should keep before them. The assignment given to the class is, in many respects, more important, especially for the children of the upper grades and in the high school, than is any other part of the recitation period.

Children's misconceptions with respect to study.—A great many pupils get a wrong conception of study. They think of it as time spent with a book in front of them reading the text in order that they may remember it and recite it to the teacher. For many of these boys and girls, time spent in quibbling over the assignment of a certain page or chapter has real virtue in satisfying the demands of the teacher. We need to have boys and girls realize what is meant by concentrating their attention upon the work to be done. We should try to have them realize that to do a piece of work in ten minutes, if one can do it well in that time, is very much better than to spend a half hour on the same task. A capable teacher may find in a class study period, in which children are asked to find the answer to a problem or to gather data which are to be used in the solution of a particular problem within a period of ten minutes, an illustration of what is meant by the concentration of attention. He may properly say to his pupils "Most of you have now concentrated your attention upon the work to be done. This is the way that you ought to work when you study at home or in the study hall." It is never a mistake to suggest to boys and girls the importance of working hard while they work.

Relation of study to the different types of teaching.—There is some advantage in considering the problem of teaching children to study in relation to the different types of teaching method employed by the teacher. When we teach skillfully we adapt our methods of teaching to the possibilities of learning possessed by our pupils. Any pupil has learned to study who knows for himself the way to work to best advantage. In other words, the method

employed by the teacher is the method which the pupil employs for himself when he works independently.

Forming habits. — In the field of habit formation, if the pupil is to master a multiplication table, a list of spelling words, a declension or a conjugation, a list of dates, or a series of formulas, he ought to know the technique involved in doing this work so as to get the desired result with the least waste of time and energy. It is quite possible to teach children how they may do this elementary work to best advantage. One does not need to give them a course in psychology, but rather, to point out to them very simple rules which they can verify in their own experience.

A teacher may well say to a class, "It is a good thing before you undertake to master the new part of your multiplication table, or the new list of words, or the perfect and pluperfect in your conjugation, to review the work which you have already mastered. As you begin to study ask yourself definitely, 'Is there any part of it which presents peculiar difficulties?'" Manifestly one must spend his time and energy, for the most part, on that which is difficult, or with which one is entirely unacquainted, rather than on that which may have a certain degree of familiarity or which may be already known. Out of the ordinary classroom situation a teacher can point out the danger of making mistakes. In every class there will be found pupils who make the same mistakes over and over again, and the reason is perfectly clear. They made the mistake once, and the tendency to make the same mistake is present every time the situation arises again. The theory that this mistake does not count can be proved absolutely

false, even with children in the intermediate grades of the elementary school.

The necessity for dividing the period devoted to repetition, so as not to continue to repeat after one has grown so tired as to lose interest or ability to concentrate his attention, is obvious. Boys and girls can learn that it pays to study as hard as they can for ten or fifteen minutes, then to undertake another type of work, and then to return to the first exercise some time later in the day. It is easy to demonstrate for children that it is necessary to review time and time again, even after one thinks that he has mastered the material which is to be learned.

Memorization. — Memorization presents one of the simplest cases of learning how to study, and yet in this field children quite frequently fail. The teacher should go through the process of memorization with his class until he is quite sure that all of the children realize the importance of thinking through the whole selection to be memorized, organizing the thought round certain of the more important ideas, and then of committing them to memory in terms of the whole and of these more important parts. A demonstration of this sort, in which the teacher participates, will tend to carry conviction. Later the teacher may very properly ask pupils to tell just how they have committed to memory a particular selection.

Study involving thinking. — In the field involving thinking, the process of study becomes very much more complex. Here, more than in the other cases already discussed, it is necessary for the pupil to start with a very well-defined purpose or problem. One cannot be expected to do any thinking without knowing clearly and definitely the goal

which he seeks. In a class in which children are permitted to discuss the problems which naturally occur to them, a teacher will often find in the problems of the pupils a purpose to place before them in their study. In a geography class, for example, an inquiry concerning the resources of the United States may be the means of developing a problem which will have to do with the measures that have been taken for the conservation of our natural resources. In another class the question of the resources of Alsace-Lorraine may furnish an interesting point of departure with respect to the cause of the Franco-Prussian War. In a nature study class the methods which have been employed to increase the yield of grains and vegetables may furnish a basis for a most interesting study of the development that has taken place in increasing the food supply of the world.

The use of books. — Children have to learn in school, or out of it, how to find the answers to their problems by going to the books in which are to be found most of the information needed. They may, of course, learn something of the technique of observation and experimentation, but for most of the problems with which they have to deal, the most important single source of data will be the magazine, the government report, and the books to be found in the library. A great many boys and girls pass through schools without learning how to use the tables of contents and the indexes supplied in well-made books, periodicals, and reports. It will be well, from time to time, to supply a class with copies of books and reports, outside of the regular textbooks, with an assignment to find a particular discussion, or table of figures, or diagram, as the case may

be. The exercise having been set, children can be guided in their attack upon the problem until they learn how to use an index or a table of contents to best advantage.

Taking notes. — It is important, after learning how to find things in books, to know how to abstract the material that is discovered. Children need to be given practice in writing the essence of a paragraph in a single sentence. In abstracting a chapter, or even a book, or a page or two, they must come to understand, if they are ever to be successful students, that they go to a particular book or report for the sake of getting the contribution which applies to their particular problem. Too many grown-ups, as well as children, seem to feel that they must read the whole book and master it all if they are to study.

The organization of knowledge. — Children from the fourth grade on can be taught how to organize materials which they have brought together. It will pay to have them list all of the facts that they have found, and all of the discussions which they have read, under as many heads as may occur to them. For example, children who are at work on the problem of reclaiming arid lands in the western part of the United States may come to the class with the suggestion that they have found facts which they classify under twenty or thirty different heads. The teacher may very properly place all of these facts on the board and then ask that the class seek to discover a very few main divisions which will include all of the facts which have been collected. This process of organizing materials in the light of the problem which one has in mind, is one of the most valuable that children can engage in. Practice of this sort should be given over and over again. When inde-

pendent work is done in this field, outside of the class, it will be well from time to time to have the class criticize the work done by individuals.

The use of the library. — Wherever it is possible, children should be made acquainted with the opportunities for study which are provided in any well-equipped library, to learn how to use a card catalog, to gain skill in consulting the indexes to periodical literature, to get even a speaking acquaintance with the leading magazines in a number of fields. These are the experiences which make for studiousness, not only while in school, but after one has no longer the stimulus which comes from a wide-awake teacher. It may very well be argued that time spent under competent direction in a library, whether organized in the school building or outside of it, is as important as anything that can be done by way of teaching facts in the classroom. It is to be hoped that in more of the cities of the United States the practice already prevailing in some of them of placing branch libraries in public school buildings, will be developed.

Supervised study. — Supervised study periods should be found in every classroom. As in the case of teaching, with the definite result desired in the mind of the teacher, so in the case of teaching pupils how to study, very great differences will be found among the members of any class group. There are children who, with a minimum of suggestion, will learn to work advantageously. There are those for whom the more important problems, involving a wider range of inquiry, will furnish the stimulus which will keep them alive intellectually and enthusiastic in their school work. There are other pupils who, during the

supervised study period, will be found to want to rest to too great an extent upon the directions given by the teacher. It is quite as important that a teacher know when not to give help as when to provide it. The aim should be in every case to throw pupils back upon their own resources, and to discuss with them methods of attack, rather than to propose for them the solution of the problems which they have for consideration. A variation in the assignment of work to be done is essential if success is to be attained. A teacher may very properly make assignments which will provide that the more capable students will come to class with the more important contribution growing out of study involving their very best ability, while the pupil with less maturity or with less intellectual ability may very properly receive an assignment involving less skill in independent work, but nevertheless stimulating him to his own best effort. We need to recognize that the development of a method of attack in the part of the lesson devoted to the assignment of the next day's work, is one of the most important obligations of the teacher.

Children do not learn to study because tasks are assigned to them, or because they are told to think. Many a pupil worries and frets over his inability to meet the requirements of a teacher, and finally gives up in disgust and just manages to squeeze through the work to be done, because the teacher has never taken seriously the problem of helping him to attack the subject in hand. Many parents become dissatisfied with the progress of children, especially in the upper grades and in the high school, because the children are themselves unhappy and dissatisfied in trying to meet school demands. Children are ordinarily happy in school

work when they know how to do it. The obligation to teach them how to work independently rests upon teachers. The best thing that a teacher ever does for boys or girls is to help them to develop the power to work independently. Successful teaching will always result in enabling pupils to continue their intellectual work without the aid of teachers.

QUESTIONS

1. How may we hope to have children learn to study in the fields requiring judgment?

2. How would you attempt to teach a girl to study her spelling lessons who has great difficulty in reaching the class average in spelling and yet ranks well in other subjects?

3. What physical defects frequently found among children interfere seriously with their study? What is the teacher's responsibility in such matters?

4. To what extent is it possible for your boys and girls to study at home during the evening? If the home study is not possible, what is the obligation of the school?

5. What is your definition of "supervised study"?

6. What are the duties of the teacher who supervises a study hour? Is this period a period of rest for teacher and pupil?

7. What responsibility rests upon the teacher for providing a motive for a child in his study?

8. How important is the nature of the assignment to the child in his study? Discuss the relative importance of the following items in an assignment:

(a) The teacher utilizes the child's problem.

(b) Material is suggested for solution of problems.

(c) Teacher allows for pupils' coöperation.

(d) Assignment by pages or paragraphs.

(e) Assignment by topics.

(f) Assignment in a manner to prevent confusion or misunderstanding.

9. How may children be taught to discriminate between the importance of the contributions which they may make to the class recitation?

10. Can the school transfer to the parent the responsibility for teaching how to study? Which of the following is the most important function of the school?

- (a) Hearing recitations.
- (b) Cultivating habits of study in children.
- (c) Permitting child participation in social activities.
- (d) Giving children command of the tool subjects.

11. What percentage of your time during a day is devoted to teaching children to study? In a week?

12. What provision is made in your school for teaching children the use of atlases, dictionaries, yearbooks, and other reference books that must be used in study?

13. Is it advantageous to a child in his study to have all his school problems for a period of time centering upon and in one end or purpose?

14. To what degree is coercion effective in securing good results in study from children?

15. Should the child be fully informed concerning the purpose of an assignment before he is asked to study in any field?

REFERENCES FOR READING

- Dewey, *How We Think*.
- Earhart, *Teaching Children to Study*.
- Hall-Quest, *Supervised Study*.
- McMurry, *How to Study*.

CHAPTER VIII

THE CLASSIFICATION AND PROGRESS OF CHILDREN

RETARDATION and the teacher's responsibility. —

The many age-grade and age-progress studies made of school systems of the United States have pointed out the need for teacher-analysis of these classroom problems. Time and experience have proved the fallacy of the belief that an unselected group of thirty to forty children having begun their career in the first grade at approximately the same age might be expected to progress with equal rapidity and finish the eighth grade at the same time. The problems of retardation and elimination will only become less burdensome in a school system as the possibility of assisting in their solution is recognized by the classroom teacher. Records are available which show that exceedingly large percentages of over-age children and those making slow progress are found in the same school systems for each of a period of years. Frequent teacher discussion of causes and cures and teacher participation in the attack on the problem may be the needed remedy for such subnormal conditions.

Individual differences. — The teacher who would do his work intelligently must from the very first day of school think in terms of the individual differences of the pupils of his class group. He must learn to measure such differences scientifically so that each child may be accorded

the attention and care which will permit his progress with the utmost rapidity. The division of the class into recitation and study groups will be made only after a full interpretation of the facts of individual differences which the teacher should make available for himself. Such differences may be expressed in terms of (*a*) age, (*b*) school progress, (*c*) subject progress, (*d*) subject achievement, (*e*) social opportunity, (*f*) physical inheritance and home care, (*g*) native intelligence, and (*h*) attendance. It is recognized that the division into the suggested study and recitation groups should not be made on the basis of any one difference but with consideration of two, three, or perhaps more differences. The formation of class sections which group separately the young-rapidly progressing children from the older-slowly progressing groups indicates how segregations can be made. The actual facts of age, progress, grade-failure, subject-failure, attendance, and subject achievement must be made available before impartial treatment can be accorded children when class groupings are made. The intelligent direction of the operations of the average elementary grade class over a semester or school term presupposes an intimate teacher knowledge of these important data.

The determination of age-differences.—Certain differences may be measured in very definite terms and will be so measured by the teacher who desires to be properly prepared in respect to his teaching problems. It may appear to many teachers that the ages of children will furnish the simplest basis for determining differences. There are difficulties involved even in age studies which must not be overlooked. The age differences are to best

advantage expressed in numbers and percentages of children who are over-age, of normal age or under-age for the grade. In making these differentiations it is highly essential that accurate age-entrance and accurate age-completion limits for normality in all grades be established. It is clear that the same limits may not be arbitrarily set for all communities in a nation which has as yet not accepted a uniform entrance basis under its compulsory attendance laws. The normal age limits of Tables IV and V have, however, met with considerable favor. They may be adopted even where the lower compulsory attendance limit for a state is eight years of age instead of seven.

TABLE IV

NORMAL AGE LIMITS FOR GRADES 1 TO 8 WHERE ONLY ANNUAL PROMOTIONS PREVAIL

GRADE	NORMAL AGE LIMITS FOR ENTERING THE GRADE	NORMAL AGE LIMITS FOR COMPLETING THE GRADE
1	5 yr. 9 mo. up to 7 yr. 3 mo.	6 yr. 9 mo. up to 8 yr. 3 mo.
2	6 yr. 9 mo. up to 8 yr. 3 mo.	7 yr. 9 mo. up to 9 yr. 3 mo.
3	7 yr. 9 mo. up to 9 yr. 3 mo.	8 yr. 9 mo. up to 10 yr. 3 mo.
4	8 yr. 9 mo. up to 10 yr. 3 mo.	9 yr. 9 mo. up to 11 yr. 3 mo.
5	9 yr. 9 mo. up to 11 yr. 3 mo.	10 yr. 9 mo. up to 12 yr. 3 mo.
6	10 yr. 9 mo. up to 12 yr. 3 mo.	11 yr. 9 mo. up to 13 yr. 3 mo.
7	11 yr. 9 mo. up to 13 yr. 3 mo.	12 yr. 9 mo. up to 14 yr. 3 mo.
8	12 yr. 9 mo. up to 14 yr. 3 mo.	13 yr. 9 mo. up to 15 yr. 3 mo.

Birth certificates. — The teacher who wishes to determine for himself the number of children in his class who are over-age and under-age must first ascertain, as correctly

as possible, the dates of birth of all the children of his class group. A proper system of record cards installed in the school will enable the teacher to secure such data with ease. If such records are not kept it may be necessary for the teacher, before making age computations, to request children to bring birth certificates for the purpose of permitting the recording of the exact dates of birth. If no adequate system of birth registration has been installed by the local health or civic authorities the teacher may well

TABLE V

NORMAL AGE LIMITS FOR GRADES 1B TO 8A WHERE SEMIANNUAL PROMOTIONS PREVAIL

GRADE	NORMAL AGE LIMITS FOR ENTERING THE GRADE	NORMAL AGE LIMITS FOR COMPLETING THE GRADE
1B	5 yr. 9 mo. up to 6 yr. 9 mo.	6 yr. 9 mo. up to 7 yr. 9 mo.
1A	6 yr. 3 mo. up to 7 yr. 3 mo.	7 yr. 3 mo. up to 8 yr. 3 mo.
2B	6 yr. 9 mo. up to 7 yr. 9 mo.	7 yr. 9 mo. up to 8 yr. 9 mo.
2A	7 yr. 3 mo. up to 8 yr. 3 mo.	8 yr. 3 mo. up to 9 yr. 3 mo.
3B	7 yr. 9 mo. up to 8 yr. 9 mo.	8 yr. 9 mo. up to 9 yr. 9 mo.
3A	8 yr. 3 mo. up to 9 yr. 3 mo.	9 yr. 3 mo. up to 10 yr. 3 mo.
4B	8 yr. 9 mo. up to 9 yr. 9 mo.	9 yr. 9 mo. up to 10 yr. 9 mo.
4A	9 yr. 3 mo. up to 10 yr. 3 mo.	10 yr. 3 mo. up to 11 yr. 3 mo.
5B	9 yr. 9 mo. up to 10 yr. 9 mo.	10 yr. 9 mo. up to 11 yr. 9 mo.
5A	10 yr. 3 mo. up to 11 yr. 3 mo.	11 yr. 3 mo. up to 12 yr. 3 mo.
6B	10 yr. 9 mo. up to 11 yr. 9 mo.	11 yr. 9 mo. up to 12 yr. 9 mo.
6A	11 yr. 3 mo. up to 12 yr. 3 mo.	12 yr. 3 mo. up to 13 yr. 3 mo.
7B	11 yr. 9 mo. up to 12 yr. 9 mo.	12 yr. 9 mo. up to 13 yr. 9 mo.
7A	12 yr. 3 mo. up to 13 yr. 3 mo.	13 yr. 3 mo. up to 14 yr. 3 mo.
8B	12 yr. 9 mo. up to 13 yr. 9 mo.	13 yr. 9 mo. up to 14 yr. 9 mo.
8A	13 yr. 3 mo. up to 14 yr. 3 mo.	14 yr. 3 mo. up to 15 yr. 3 mo.

use his present need as a public argument for providing children with this official safeguard. Children can also profit much by being taught the need for properly recorded birth statistics. Teachers should point out that only through such official records does it frequently become possible to prove (*a*) age and citizenship, (*b*) the right to go to school, (*c*) the right to work, (*d*) the right to bear arms in the nation's defense, (*e*) the right to an inheritance, (*f*) the right to marry, (*g*) the right to hold office, (*h*) the right to secure passports for foreign travel, (*i*) the mother's right to a widow's pension. The school may well assist in safeguarding such rights for its children.

Children's birth certificates should not be retained by school authorities but should be returned to the parents after the desired facts have been transferred for permanent record upon the school files.

Ages as of September 1. — After the dates of birth have been assembled it becomes necessary to transmute them into ages for the current school year. All ages should be calculated as of one of two dates. September 1 has proved to be the most acceptable date for school systems generally when only one age table is being made for a school year or when age tables are planned with respect to the fall semester only. When a second age table is desired for the spring semester, it is best to calculate ages as of the date March 1, which is six months later than September 1, of the fall semester. Thus, although the semi-annual promotional period may occur in January, the age tables for the two semesters become comparable since the calendar year and the scholastic year are divided into the two equal parts required.

TABLE VI

SEPTEMBER 1. TABLE FOR COMPUTING THE AGES OF SCHOOL CHILDREN FOR AGE-GRADE DISTRIBUTIONS

Ages are given as of September 1 and are figured for each age period according to the nearest birthday. For example: Any pupil whose date of birth falls on or between June 1, 1914, and November 30, 1914, is considered to be five years old on September 1, 1919. Any pupil whose date of birth falls on or between December 1, 1904, and May 31, 1905, is considered to be fourteen and one-half years old on September 1, 1919.

AGE	SCHOOL YEAR 1919-1920		AGE	SCHOOL YEAR 1919-1920	
	Age period includes all children whose ages run from	If date of birth falls on or between		Age period includes all children whose ages run from	If date of birth falls on or between
4½ yr.	4 yr. 3 mo. to 4 yr. 9 mo.	Dec. 1, 1914 and May 31, 1915	7½ yr.	7 yr. 3 mo. to 7 yr. 9 mo.	Dec. 1, 1911 and May 31, 1912
5 yr.	4 yr. 9 mo. to 5 yr. 3 mo.	June 1, 1914 and Nov. 30, 1914	8 yr.	7 yr. 9 mo. to 8 yr. 3 mo.	June 1, 1911 and Nov. 20, 1911
5½ yr.	5 yr. 3 mo. to 5 yr. 9 mo.	Dec. 1, 1913 and May 31, 1914	8½ yr.	8 yr. 3 mo. to 8 yr. 9 mo.	Dec. 1, 1910 and May 31, 1911
6 yr.	5 yr. 9 mo. to 6 yr. 3 mo.	June 1, 1913 and Nov. 30, 1913	9 yr.	8 yr. 9 mo. to 9 yr. 3 mo.	June 1, 1910 and Nov. 30, 1910
6½ yr.	6 yr. 3 mo. to 6 yr. 9 mo.	Dec. 1, 1912 and May 31, 1913	9½ yr.	9 yr. 3 mo. to 9 yr. 9 mo.	Dec. 1, 1909 and May 31, 1910
7 yr.	6 yr. 9 mo. to 7 yr. 3 mo.	June 1, 1912 and Nov. 30, 1912	10 yr.	9 yr. 9 mo. to 10 yr. 3 mo.	June 1, 1909 and Nov. 30, 1909

AGE	SCHOOL YEAR 1919-1920		AGE	SCHOOL YEAR 1919-1920	
	Age period includes all children whose ages run from	If date of birth falls on or between		Age period includes all children whose ages run from	If date of birth falls on or between
10½ yr.	10 yr. 3 mo. to 10 yr. 9 mo.	Dec. 1, 1908 and May 31, 1909	14½ yr.	14 yr. 3 mo. to 14 yr. 9 mo.	Dec. 1, 1904 and May 31, 1905
11 yr.	10 yr. 9 mo. to 11 yr. 3 mo.	June 1, 1908 and Nov. 30, 1908	15 yr.	14 yr. 9 mo. to 15 yr. 3 mo.	June 1, 1904 and Nov. 30, 1904
11½ yr.	11 yr. 3 mo. to 11 yr. 9 mo.	Dec. 1, 1907 and May 31, 1908	15½ yr.	15 yr. 3 mo. to 15 yr. 9 mo.	Dec. 1, 1903 and May 31, 1904
12 yr.	11 yr. 9 mo. to 12 yr. 3 mo.	June 1, 1907 and Nov. 30, 1907	16 yr.	15 yr. 9 mo. to 16 yr. 3 mo.	June 1, 1903 and Nov. 30, 1903
12½ yr.	12 yr. 3 mo. to 12 yr. 9 mo.	Dec. 1, 1906 and May 31, 1907	16½ yr.	16 yr. 3 mo. to 16 yr. 9 mo.	Dec. 1, 1902 and May 31, 1903
13 yr.	12 yr. 9 mo. to 13 yr. 3 mo.	June 1, 1906 and Nov. 30, 1906	17 yr.	16 yr. 9 mo. to 17 yr. 3 mo.	June 1, 1902 and Nov. 30, 1902
13½ yr.	13 yr. 3 mo. to 13 yr. 9 mo.	Dec. 1, 1905 and May 31, 1906	17½ yr.	17 yr. 3 mo. to 17 yr. 9 mo.	Dec. 1, 1901 and May 31, 1902
14 yr.	13 yr. 9 mo. to 14 yr. 3 mo.	June 1, 1905 and Nov. 30, 1905	18 yr.	17 yr. 9 mo. to 18 yr. 3 mo.	June 1, 1901 and Nov. 30, 1901

Age-computation tables.—Observe that Table VI permits of the transmutation of dates of birth to ages as of September 1 for the school year 1919-20. Table VII permits of the transmutation of dates of birth to ages as of March 1, for the school year 1919-20. Using these tables for the school year 1919-20 as a basis, age computation tables for any other school year may be arranged.

TABLE VI

SEPTEMBER 1. TABLE FOR COMPUTING THE AGES OF SCHOOL
CHILDREN FOR AGE-GRADE DISTRIBUTIONS

Ages are given as of September 1 and are figured for each age period according to the nearest birthday. For example: Any pupil whose date of birth falls on or between June 1, 1914, and November 30, 1914, is considered to be five years old on September 1, 1919. Any pupil whose date of birth falls on or between December 1, 1904, and May 31, 1905, is considered to be fourteen and one-half years old on September 1, 1919.

AGE	SCHOOL YEAR 1919-1920		AGE	SCHOOL YEAR 1919-1920	
	Age period includes all children whose ages run from	If date of birth falls on or between		Age period includes all children whose ages run from	If date of birth falls on or between
4½ yr.	4 yr. 3 mo. to 4 yr. 9 mo.	Dec. 1, 1914 and May 31, 1915	7½ yr.	7 yr. 3 mo. to 7 yr. 9 mo.	Dec. 1, 1911 and May 31, 1912
5 yr.	4 yr. 9 mo. to 5 yr. 3 mo.	June 1, 1914 and Nov. 30, 1914	8 yr.	7 yr. 9 mo. to 8 yr. 3 mo.	June 1, 1911 and Nov. 20, 1911
5½ yr.	5 yr. 3 mo. to 5 yr. 9 mo.	Dec. 1, 1913 and May 31, 1914	8½ yr.	8 yr. 3 mo. to 8 yr. 9 mo.	Dec. 1, 1910 and May 31, 1911
6 yr.	5 yr. 9 mo. to 6 yr. 3 mo.	June 1, 1913 and Nov. 30, 1913	9 yr.	8 yr. 9 mo. to 9 yr. 3 mo.	June 1, 1910 and Nov. 30, 1910
6½ yr.	6 yr. 3 mo. to 6 yr. 9 mo.	Dec. 1, 1912 and May 31, 1913	9½ yr.	9 yr. 3 mo. to 9 yr. 9 mo.	Dec. 1, 1909 and May 31, 1910
7 yr.	6 yr. 9 mo. to 7 yr. 3 mo.	June 1, 1912 and Nov. 30, 1912	10 yr.	9 yr. 9 mo. to 10 yr. 3 mo.	June 1, 1909 and Nov. 30, 1909

AGE	SCHOOL YEAR 1919-1920		AGE	SCHOOL YEAR 1919-1920	
	Age period includes all children whose ages run from	If date of birth falls on or between		Age period includes all children whose ages run from	If date of birth falls on or between
10½ YR.	10 yr. 3 mo. to 10 yr. 9 mo.	Dec. 1, 1908 and May 31, 1909	14½ YR.	14 yr. 3 mo. to 14 yr. 9 mo.	Dec. 1, 1904 and May 31, 1905
11 YR.	10 yr. 9 mo. to 11 yr. 3 mo.	June 1, 1908 and Nov. 30, 1908	15 YR.	14 yr. 9 mo. to 15 yr. 3 mo.	June 1, 1904 and Nov. 30, 1904
11½ YR.	11 yr. 3 mo. to 11 yr. 9 mo.	Dec. 1, 1907 and May 31, 1908	15½ YR.	15 yr. 3 mo. to 15 yr. 9 mo.	Dec. 1, 1903 and May 31, 1904
12 YR.	11 yr. 9 mo. to 12 yr. 3 mo.	June 1, 1907 and Nov. 30, 1907	16 YR.	15 yr. 9 mo. to 16 yr. 3 mo.	June 1, 1903 and Nov. 30, 1903
12½ YR.	12 yr. 3 mo. to 12 yr. 9 mo.	Dec. 1, 1906 and May 31, 1907	16½ YR.	16 yr. 3 mo. to 16 yr. 9 mo.	Dec. 1, 1902 and May 31, 1903
13 YR.	12 yr. 9 mo. to 13 yr. 3 mo.	June 1, 1906 and Nov. 30, 1906	17 YR.	16 yr. 9 mo. to 17 yr. 3 mo.	June 1, 1902 and Nov. 30, 1902
13½ YR.	13 yr. 3 mo. to 13 yr. 9 mo.	Dec. 1, 1905 and May 31, 1906	17½ YR.	17 yr. 3 mo. to 17 yr. 9 mo.	Dec. 1, 1901 and May 31, 1902
14 YR.	13 yr. 9 mo. to 14 yr. 3 mo.	June 1, 1905 and Nov. 30, 1905	18 YR.	17 yr. 9 mo. to 18 yr. 3 mo.	June 1, 1901 and Nov. 30, 1901

Age-computation tables.—Observe that Table VI permits of the transmutation of dates of birth to ages as of September 1 for the school year 1919-20. Table VII permits of the transmutation of dates of birth to ages as of March 1, for the school year 1919-20. Using these tables for the school year 1919-20 as a basis, age computation tables for any other school year may be arranged.

TABLE VII

MARCH 1. TABLE FOR COMPUTING THE AGES OF SCHOOL CHILDREN
FOR AGE-GRADE DISTRIBUTIONS

Ages are given as of March 1 and are figured for each age period according to the nearest birthday. Examples: Any pupil whose date of birth falls on or between December 1, 1913, and May 31, 1914, is considered to be six years old on March 1, 1920. Any pupil whose date of birth falls on or between June 1, 1908, and November 30, 1908, is considered to be eleven and one-half years old on March 1, 1920.

AGE	SCHOOL YEAR 1919-1920		AGE	SCHOOL YEAR 1919-1920	
	Age period includes all children whose ages run from	If date of birth falls on or between		Age period includes all children whose ages run from	If date of birth falls on or between
4½ yr.	4 yr. 3 mo.	June 1, 1915	8 yr.	7 yr. 9 mo.	Dec. 1, 1911
	to	and		to	and
5 yr.	4 yr. 9 mo.	Nov. 30, 1915	8½ yr.	8 yr. 3 mo.	May 31, 1912
	4 yr. 9 mo.	Dec. 1, 1914		8 yr. 3 mo.	June 1, 1911
5½ yr.	to	and	9 yr.	to	and
	5 yr. 3 mo.	May 31, 1915		8 yr. 9 mo.	Nov. 30, 1911
6 yr.	5 yr. 3 mo.	June 1, 1914	9½ yr.	8 yr. 9 mo.	Dec. 1, 1910
	to	and		to	and
6½ yr.	5 yr. 9 mo.	Nov. 30, 1914	10 yr.	9 yr. 3 mo.	May 31, 1911
	5 yr. 9 mo.	Dec. 1, 1913		9 yr. 3 mo.	June 1, 1910
7 yr.	to	and	10½ yr.	to	and
	6 yr. 3 mo.	May 31, 1914		9 yr. 9 mo.	Nov. 30, 1910
7½ yr.	6 yr. 3 mo.	June 1, 1913	11 yr.	9 yr. 9 mo.	Dec. 1, 1909
	to	and		to	and
8 yr.	6 yr. 9 mo.	Nov. 30, 1913	11½ yr.	10 yr. 3 mo.	May 31, 1910
	6 yr. 9 mo.	Dec. 1, 1912		10 yr. 3 mo.	June 1, 1909
8½ yr.	to	and	12 yr.	to	and
	7 yr. 3 mo.	May 31, 1913		10 yr. 9 mo.	Nov. 30, 1909
9 yr.	7 yr. 3 mo.	June 1, 1912	12½ yr.	10 yr. 9 mo.	Dec. 1, 1908
	to	and		to	and
9½ yr.	7 yr. 9 mo.	Nov. 30, 1912	13 yr.	11 yr. 3 mo.	May 31, 1909
	7 yr. 9 mo.	Dec. 1, 1911		11 yr. 3 mo.	June 1, 1908

AGE	SCHOOL YEAR 1919-1920		AGE	SCHOOL YEAR 1919-1920	
	Age period includes all children whose ages run from	If date of birth falls on or between		Age period includes all children whose ages run from	If date of birth falls on or between
11½ yr.	11 yr. 3 mo. to 11 yr. 9 mo.	June 1, 1908 and Nov. 30, 1908	15 yr.	14 yr. 9 mo. to 15 yr. 3 mo.	Dec. 1, 1904 and May 31, 1905
12 yr.	11 yr. 9 mo. to 12 yr. 3 mo.	Dec. 1, 1907 and May 31, 1908	15½ yr.	15 yr. 3 mo. to 15 yr. 9 mo.	June 1, 1904 and Nov. 30, 1904
12½ yr.	12 yr. 3 mo. to 12 yr. 9 mo.	June 1, 1907 and Nov. 30, 1907	16 yr.	15 yr. 9 mo. to 16 yr. 3 mo.	Dec. 1, 1903 and May 31, 1904
13 yr.	12 yr. 9 mo. to 13 yr. 3 mo.	Dec. 1, 1906 and May 31, 1907	16½ yr.	16 yr. 3 mo. to 16 yr. 9 mo.	June 1, 1903 and Nov. 30, 1903
13½ yr.	13 yr. 3 mo. to 13 yr. 9 mo.	June 1, 1906 and Nov. 30, 1906	17 yr.	16 yr. 9 mo. to 17 yr. 3 mo.	Dec. 1, 1902 and May 31, 1903
14 yr.	13 yr. 9 mo. to 14 yr. 3 mo.	Dec. 1, 1905 and May 31, 1906	17½ yr.	17 yr. 3 mo. to 17 yr. 9 mo.	June 1, 1902 and Nov. 30, 1902
14½ yr.	14 yr. 3 mo. to 14 yr. 9 mo.	June 1, 1905 and Nov. 30, 1905	18 yr.	17 yr. 9 mo. to 18 yr. 3 mo.	Dec. 1, 1901 and May 31, 1902

It will be seen that the ages in these tables are not calculated from one annual birthday to the next annual birthday as is the practice in everyday life. This common procedure fails, it seems, to give due consideration to the first year of a child's life. Under this method of reckoning, age is established as shown in Table VIII.

The Strayer-Engelhardt Complete Age Computation Table for the Years 1919-28 may be secured from C. F. Williams & Son, Inc., Albany, N. Y.

TABLE VIII

A CHILD IS CONSIDERED	DURING HIS	WHICH INCLUDES THE PERIOD
0 years of age	1st year of life	from birth to 11 mo. 30 da.
1 year of age	2d year of life	from 12 mo. to 1 yr. 11 mo. 30 da.
2 years of age	3d year of life	from 24 mo. to 2 yr. 11 mo. 30 da.
3 years of age	4th year of life	from 36 mo. to 3 yr. 11 mo. 30 da.
4 years of age	5th year of life	from 48 mo. to 4 yr. 11 mo. 30 da.
5 years of age	6th year of life	from 60 mo. to 5 yr. 11 mo. 30 da.
6 years of age	7th year of life	from 72 mo. to 6 yr. 11 mo. 30 da.
7 years of age	8th year of life	from 84 mo. to 7 yr. 11 mo. 30 da.
8 years of age	9th year of life	from 96 mo. to 8 yr. 11 mo. 30 da.
9 years of age	10th year of life	from 108 mo. to 9 yr. 11 mo. 30 da.
10 years of age	11th year of life	from 120 mo. to 10 yr. 11 mo. 30 da.

Definition of ages. — Under this practice a child may actually have lived all but one day of his tenth year of life and still be ranked as a nine-year-old or a child may actually have lived all but one day of his seventh year of life and still be ranked as a six-year-old. To avoid in some degree this fallacy the definition of ages as outlined in Table IX where the birthday of the child is located as the median or middle point of the age period has been adopted. It has met with much favor. It will be recognized as the plan for the determination of ages utilized by life insurance companies.

Age tables. — After the ages of all children of a class group have been ascertained, the teacher will desire to assemble them in an age table. Such final distribution of ages and their comparison with the age entrance limits will determine the age status of the class. A suppositional class situation is presented in Table X, showing, in addition to ages, the division into the three age groups.

TABLE IX
THE DEFINITION OF AGES OF SCHOOL CHILDREN

A CHILD IS CONSIDERED	DURING THE PERIOD
0 years of age	from birth up to 3 mo.
$\frac{1}{2}$ year of age	from 3 mo. up to 9 mo.
1 year of age	from 9 mo. up to 1 yr. 3 mo.
$1\frac{1}{2}$ years of age	from 1 yr. 3 mo. to 1 yr. 9 mo.
2 years of age	from 1 yr. 9 mo. to 2 yr. 3 mo.
$2\frac{1}{2}$ years of age	from 2 yr. 3 mo. to 2 yr. 9 mo.
3 years of age	from 2 yr. 9 mo. to 3 yr. 3 mo.
$3\frac{1}{2}$ years of age	from 3 yr. 3 mo. to 3 yr. 9 mo.
4 years of age	from 3 yr. 9 mo. to 4 yr. 3 mo.
$4\frac{1}{2}$ years of age	from 4 yr. 3 mo. to 4 yr. 9 mo.
5 years of age	from 4 yr. 9 mo. to 5 yr. 3 mo.
$5\frac{1}{2}$ years of age	from 5 yr. 3 mo. to 5 yr. 9 mo.
6 years of age	from 5 yr. 9 mo. to 6 yr. 3 mo.
$6\frac{1}{2}$ years of age	from 6 yr. 3 mo. to 6 yr. 9 mo.
7 years of age	from 6 yr. 9 mo. to 7 yr. 3 mo.
$7\frac{1}{2}$ years of age	from 7 yr. 3 mo. to 7 yr. 9 mo.
8 years of age	from 7 yr. 9 mo. to 8 yr. 3 mo.
$8\frac{1}{2}$ years of age	from 8 yr. 3 mo. to 8 yr. 9 mo.
9 years of age	from 8 yr. 9 mo. to 9 yr. 3 mo.
$9\frac{1}{2}$ years of age	from 9 yr. 3 mo. to 9 yr. 9 mo.
10 years of age	from 9 yr. 9 mo. to 10 yr. 3 mo.
$10\frac{1}{2}$ years of age	from 10 yr. 3 mo. to 10 yr. 9 mo.
11 years of age	from 10 yr. 9 mo. to 11 yr. 3 mo.
$11\frac{1}{2}$ years of age	from 11 yr. 3 mo. to 11 yr. 9 mo.
12 years of age	from 11 yr. 9 mo. to 12 yr. 3 mo.
$12\frac{1}{2}$ years of age	from 12 yr. 3 mo. to 12 yr. 9 mo.
13 years of age	from 12 yr. 9 mo. to 13 yr. 3 mo.
$13\frac{1}{2}$ years of age	from 13 yr. 3 mo. to 13 yr. 9 mo.
14 years of age	from 13 yr. 9 mo. to 14 yr. 3 mo.
$14\frac{1}{2}$ years of age	from 14 yr. 3 mo. to 14 yr. 9 mo.
15 years of age	from 14 yr. 9 mo. to 15 yr. 3 mo.
$15\frac{1}{2}$ years of age	from 15 yr. 3 mo. to 15 yr. 9 mo.
16 years of age	from 15 yr. 9 mo. to 16 yr. 3 mo.

TABLE X

AGE TABLE OF THE 4TH GRADE OF NO. 12 SCHOOL

	AGE	NUMBER OF CHILDREN	PERCENTAGE OF CHILDREN IN EACH GROUP
Children below normal age or under-age . . .	5		
	5½		
	6		
	6½		
	7		
	7½	1	2.5%
Normal age limits for entering the 4th grade . . .	8	2	5%
	8½	4	10%
	9	6	15%
	9½	7	17.5%
	10	12	30%
	10½	3	7.5%
Children above normal age or over age	11	2	5%
	11½	1	2.5%
	12	1	2.5%
	12½		
	13	1	2.5%
	13½		
Totals		40	100%

By adding the percentages under each one of the three main headings, children under-age, of normal-age, and over-age, this hypothetical group is shown to include 17.5 per cent under-age children, 62.5 per cent of children of normal age, and 20 per cent of over-age children.

To clarify their conceptions teachers may find it advantageous to follow the construction of an age table for a grade where the basal material is furnished. For this

purpose it will be assumed that the dates of birth of the following names of sixteen children of a 7B grade class were secured from official birth certificates issued by a city Board of Health.

TABLE XI

LOCATION OF SCHOOL,—JONESVILLE SCHOOL—WEBSTER
GRADE — 7B DATE OF THIS REPORT — OCT. 1, 1919

NAMES OF CHILDREN IN CLASS	DATES OF BIRTH		
	Year	Month	Day
Agnes Schurnfert	1907	June	2
Ellen MacDonald	1908	Aug.	15
Ethel Bell	1906	Dec.	13
Loretta O'Dell	1908	Feb.	2
Alfred Jose	1905	Sept.	1
Anna Redmond	1905	Dec.	1
Tom Gundy	1904	Nov.	10
Thomas Jendrosky	1906	Oct.	22
Ruth Schultz	1903	July	5
Eva Skaglund	1906	May	30
Meta Gehrmann	1907	Oct.	30
Mary O'Dell	1905	June	3
Jennie Zimmerman	1906	July	25
Carl Hudspeth	1909	May	2
Joseph Bernig	1907	Sept.	15
Stephen Rofferty	1906	Oct.	12

By reference to Table VI the ages of these 7B grade children, computed as of the date September 1, 1919, for the school year 1919-20 will be respectively 12 years, 11 years, $12\frac{1}{2}$ years, $11\frac{1}{2}$ years, 14 years, $13\frac{1}{2}$ years, 15 years, 13 years, 16 years, $13\frac{1}{2}$ years, 12 years, 14 years, 13 years, $10\frac{1}{2}$ years, 12 years, and 13 years. When these sixteen cases are assembled in one distribution the facts become those of Table XII.

TABLE XII

GRADE 7B WEBSTER SCHOOL, JONESVILLE, N.J.

	YEARS OF AGE	NO. OF CHILDREN	PERCENTAGE IN EACH GROUP
Under normal age	$10\frac{1}{2}$ 11 $11\frac{1}{2}$	1 1 1	18.7%
At normal age	12 $12\frac{1}{2}$	3 1	25%
Above normal age	13 $13\frac{1}{2}$ 14 $14\frac{1}{2}$ 15 $15\frac{1}{2}$ 16	3 2 2 1 1 1	56.3%
Total		16	100%

Determination of the progress facts of a class group. — The classroom teacher fully realizes that although his pupils may differ greatly as to age, this variation cannot always be interpreted with correctness as a variation in ability to progress in the required school work. For example, where children enter school later than the majority of children of their community, the resultant over-age status may not be indicative of inability to progress at a normal rate. A study of pupil progress through school naturally follows and supplements the determination of age facts regarding a class group.

TABLE XIII

MADISON SCHOOL

GRADE 7A

FEBRUARY 15, 1920

No.	Name of Pupil	Date of Birth			Grades attended		
		Year	Month	Day	1910-11	1911-12	1912-13
1	Algren, Raymond . . .	1907	June	8			
2	Bostrom, Allen . . .	1905	Aug.	6		1B — *1B	1A — 2B
3	Burrow, Carl . . .	1907	Jan.	12			1B — 1A
4	Cremer, Lester . . .	1905	May	7	K — K	1B — 1A	2B — *2B
5	Dicaire, Alfred . . .	1905	Jan.	23			
6	Dittes, Dorothy . . .	1908	Feb.	15			
7	Domnosky, Clara . . .	1905	Mar.	5	K	K — 1B	1A — 2B
8	Geiger, Lavine . . .	1904	Oct.	2		1B — 1A	2B — *1B
9	Gronewald, George . .	1908	June	8			
10	Hager, Edna . . .	1904	Jan.	20	1B — 1A	*1A — 2B	2A — 3B
11	Helmer, John . . .	1905	Sept.	20		K — 1B	1A — 2B
12	Helmer, Louise . . .	1907	June	4			
13	Henderschott, Flora .	1907	Apr.	1			
14	Herman, Frances . . .	1907	July	28			
15	Hinton, Stanley . . .	1908	May	10			
16	Inwood, Margaret . . .	1905	Aug.	6	1B	1A — 2B	2A — 3B
17	Johnson, Beatrice . .	1907	Mar.	13		K — K	1B — *1B
18	Jones, Arnold . . .	1905	July	5		1B — 1A	2B — 2A
19	Karin, Michael . . .	1907	Oct.	15			1B — 1A
20	Lofquist, Ray . . .	1907	June	5			
21	Metcalf, Wilfred . . .	1907	Oct.	28			1B — *1B
22	Mickelsen, Eleanor . .	1907	Aug.	13			1B — 1A
23	Moeschter, Clarence .	1905	May	1	K — K	1B — *1B	1A — 2B
24	Morgan, Clara . . .	1907	Apr.	5		1B	*1B — 1A
25	Morton, Susette . . .	1908	Sept.	28			K — 1B
26	Oatway, Marie . . .	1907	Feb.	6			
27	Olsen, Anna . . .	1907	Oct.	24			
28	Palumbo, Michael . . .	1907	July	24			1B — 1A
29	Payne, Hazel . . .	1905	Oct.	2		K — K	1B — *1B
30	Roussin, Kate . . .	1908	Sept.	22			
31	Ryan, Thomas . . .	1907	Oct.	13			K — K
32	Shandrew, John . . .	1904	Aug.	25	1B *1B	1A — 2B	*2B — 2A
33	Vignalo, Cosimo . . .	1907	Apr.	28		1B — *1B	1A — 2B
34	Weir, Dilles . . .	1907	May	3			K — K
35	Ziton, Florence . . .	1905	Aug.	6			1B — *1B

Total number of pupils enrolled, 35. K — Kindergarten. S — Skip of one

TABLE XIII (Continued)

MADISON SCHOOL

GRADE 7A

FEBRUARY 15, 1920

during each semester of past years

1913-14	1914-15	1915-16	1916-17	1917-18	1918-19	1919-20
1B-1A	2B-2A	3B-3A	4B-4A	5B-5A	6B-6A	7B-7A
2A-3B	3A-4B	4A-5B	5A-6B	6A-6A	7B-7B	7A-7A
2B-2A	3B-3A	4B-4A	5B-5B	*5B-5A	6B-6A	7B-7A
2A-3B	3A-4B	4A-5B	5A-5A	6B-6B	6A-6A	7B-7A
S-1A-2B	2A-3B	3A-4B	*4B-4A	5B-5A	6B-6A	7B-7A
K	1B-1A	2B-2A	S-3A-4B	4A-5B	5A-6B	6A-S-7A
2A-3B	3A-4B	4A-4A	5B-5B	5A-6B	6A-7B	*7B-7A
2A-3B	3A-3A	4B-4A	5B-5A	6B-6A	*6A-7B	7A-7A
1B-1A	2B-2A	3B-3A	4B-4A	5B-5A	6B-6A	7B-7A
3A-3A	4B-4A	5B-5A	6B-6B	6A-6A	7B-7A	*7A-7A
2A-3B	3A-4B	4A-4A	5B-5A	6B-6A	*6A-7B	*7B-7A
1B-1A	2B-2A	3B-3A	4B-4A	5B-5A	6B-6A	7B-7A
at	home	3B-3B	3A-4B	4A-S-5A	6B-6A	7B-7A
	K-1B	1A-S-2A	3B-3A	4B-4A	S-5A-6B	6A-S-7A
1B-1A	2B-2A	*2A-3B	3A-4B	S-5B-5A	6B-6A	7B-7A
3A-4B	4A-5B	*5B-5A	6B-6B	6A-6A	7B-7B	7A-7A
1A-2B	2A-3B	3A-4B	4A-5B	5A-6B	6A-7B	*7B-7A
ill	*2A-3B	*3B-3A	4B-4A	5B-5A	6B-6B	S-7B-7A
2B-2A	3B-3B	4B-4A	5B-5A	6B-6A	7B-7B	7A-7A
1B-1B	1A-2B	2A-S-3A	4B-4A	5B-5A	6B-6A	7B-7A
1A-1A	2B-2A	3B-3A	4B-4A	5B-5A	6B-6A	7B-7A
2B-2A	3B-3A	4B-4B	4A-4A	5B-5A	6B-6A	7B-7A
2A-2A	3B-3A	4B-4A	5B-5A	6B-6B	6A-6A	7B-7A
*1A-2B	2A-3B	3A-4B	4A-5B	5A-6B	*6B-6A	*6A-S-7A
1A-2B	2A-3B	3A-4B	4A-5B	5A-6B	6A-7B	7A-7A
1B-1A	2B-2A	3B-3A	4B-4A	5B-5A	6B-6A	7B-7A
1B-1A	2B-2A	3B-3A	4B-4A	5B-5A	6B-6A	7B-7A
2B-2A	3B-3A	4B-4B	4A-5B	5A-6B	6A-7B	*7B-7A
1A-2B	2A-3B	3A-4B	4A-5B	5A-6B	6A-7B	7A-7A
1B-S-S-2A	3B-3A	4B-4A	5B-5A	*5A-6B	*6A-6A	7B-7A
1B-1A	2B-2A	3B-3A	4B-4A	5B-5A	6B-6A	7B-7A
3B-3B	3A-4B	4A-4A	*4A-5B	5A-5A	6B-6A	7B-7A
2A-3B	3A-4B	*4B-4A	*4A-5B	5A-5A	6B-6A	7B-7A
1B-1A	2B-2A	3B-3A	4B-4A	5B-5A	6B-6A	7B-7A
1A-2B	2A-3B	3A-4B	*4B-S-5B	5A-6B	*6B-6A	7B-7A

semester or double promotion. *—Non-promotion for one semester.

The element of progress, like that of age, may be divided into three parts called normal progress, slow progress or progress at a rate below normal, and rapid progress or progress at a rate above normal. Normal progress may be defined as that progress through a school system whereby a child advances regularly and without a failure to be promoted at any promotion period. It means that where semiannual promotions prevail in a school a child in passing from the beginning of school work in the first grade through the eighth grade will have been in each half-grade for one term or semester only and will have had one unbroken record of sixteen promotion periods. Any number of promotions less than sixteen would in the case of such a child indicate a progress more rapid than normal, while any repetition of a half-grade or semester section would result in a record of slow progress on the part of the child. Any deviations from normal progress may best be expressed in terms of the number of times children have skipped grades or failed of promotion in such grades.

Progress study dependent upon adequate records. — A progress study can only be made with accuracy in schools where a permanent school record system has been maintained over a period of years. From such records data as shown in Table XIII may be secured. In this table are given the names of all children of a 7A class as they might have appeared on a class register on February 15, 1920, together with the suppositional grades and grade sections which those children might have attended each semester from the beginning of their school careers.

Experience proves that children are not able to furnish with accuracy information concerning their own school

progress. Progress studies involving only pupil knowledge of the original data have little validity. The school records alone should be relied upon to give such information.

It was considered desirable to indicate in Table XIII each time that one of the thirty-five children failed to be promoted at the end of a semester's work and each time that a child was allowed to skip a whole semester's work. The non-promotions are in each instance indicated by an asterisk and the double promotions or "skips" by the letter "S." Normally it requires six and one half years of school time to reach grade 7A, providing the kindergarten is not included in the reckoning. It will be observed that only seven of the 35 pupils of Table XIV, or 20 per cent, have therefore progressed without skips or non-promotions. In the case of five other pupils the skips as shown in Table XIV offset the non-promotions, permitting the completion of the work in the normal period of years. The detailed summary of non-promotions and skips for this class appears in Table XIV.

The tracing of two or three cases¹ will enable any teacher to read this table and to produce a similar one for his own group. Pupil No. 1, Raymond Algren by name, began school with the 1B grade in 1913-14. He has progressed normally during the seven years that he has been in school, and in February, 1920, was in the seventh grade. On the other hand, Edna Hager, or pupil No. 10, began school in the 1B grade in 1910-11, has failed of promotion six times, and in February, 1920, was in the 7A Grade.

¹ Since attendance at kindergarten is unfortunately not as yet required in many school systems, it seems wise not to make it a part of this progress study.

TABLE XIV
NON-PROMOTIONS AND SKIPS OF 7A GRADE — MADISON SCHOOL

PUPIL No.	CHILD HAVING NEITHER SKIPS NOR REPETITIONS	CHILD WHO HAS SKIPPED ONCE AND REPEATED ONCE	TWO SKIPS AND TWO REPETITIONS	CHILDREN WHO HAVE HAD NON- PROMOTIONS OR REPETITIONS ONLY AND NO SKIPS						CHILDREN WHO HAVE HAD SKIPS ONLY		
				one	two	three	four	five	six	one	two	three
1	X											
2							X					
3					X							
4							X					
5		X										
6											X	
7						X						
8							X					
9	X											
10									X			
11						X						
12	X											
13		X										
14		X										X
15												
16								X				
17					X							
18					X ^m							
19						X						
20		X										
21					X							
22					X							
23							X					
24						X ^o						
25				X								
26	X											
27	X											
28					X							
29					X							
30			X									
31	X											
32									X			
33							X					
34	X											
35					X ^m							
Total.	7	4	1	1	8	4	5	1	2		1	1

^m. Three repetitions and one skip are equivalent to two repetitions.

^o. Four repetitions and one skip are equivalent to three repetitions.

Expressed in terms of normality the progress of this group of thirty-five pupils is summarized as follows:

	SLOW PROGRESS	NORMAL PROGRESS	RAPID PROGRESS
No. of children . . .	21	12	2
Percentage of children	60 %	34 %	6%

Causes of slow progress in school. — The unsatisfactory conditions with respect to pupil progress which are shown to exist in this 7A grade of Madison School are frequently found in our schools. Although the success of a school or school system is indicated in large measure by the ability of such a school or system to permit children to progress at a normal rate, decreases in the percentage of children making slow progress have not been made in many school systems over periods of years. It is obvious that the progress study of this particular group points out the need for an intensive study into the causes of non-promotion in the school. The responsibility for non-promotion, it should be recognized, may rest elsewhere than upon the child. The great necessity for adapting courses of study to the needs of different kinds of children is at least one positive conclusion which has grown out of many progress studies in our school systems while arbitrary marking systems have been altered considerably as a result of the discussions growing out of such studies.

Cost of slow progress. — The situation with respect to the children of Table XIII may be restated in a form involving time and cost expenditures for the education secured. Although $6\frac{1}{2}$ years is the normal time required for each

child to reach the 7A grade, the average time for this class is 7.4 years, as indicated in Table XV. The total cost to the school system becomes approximately \$10,040 instead of \$8840, as the median cost per child in average daily attendance in cities of the United States has been approximately \$40¹ for the period of time during which this class was in attendance at school.

TABLE XV

TIME EXPENDITURE REQUIRED BY 34 PUPILS OF TABLE XIV TO REACH GRADE 7A²

TIME SPENT BY EACH PUPIL	NO. OF PUPILS	TOTAL TIME SPENT
5 years	1	5
5½ years	1	5½
6 years	0	0
6½ years	11 ²	71½
7 years	1	7
7½ years	9	67½
8 years	3	24
8½ years	5	42½
9 years	1	9
9½ years	2	19

Total number of years for 34 children 251

Average number of years required by the class
to do 6½ years of work 7.4

Age-progress data. — Records showing a combination of the two elements, age and progress, may easily be ascertained.

¹ N. L. Engelhardt. A School Building Program for Cities. Bureau of Publications, Teachers College, Columbia University, p. 124.

² School Record for child No. 13 of Table XIII is not complete.

bled after the separate studies of age and of progress have been made. Such combined records may take the form indicated in Table XVII. Teachers will note that the class is thus divided into nine different parts and if a number or an initial is placed in the proper division to designate each child, the entire class problem is clearly presented for discussion with supervisors or principal or for the teacher's guidance.

These nine divisions of a class are :

- (1) Under-age — rapid progress children
- (2) Normal age — rapid progress children
- (3) Over-age — rapid progress children
- (4) Under-age — normal progress children
- (5) Normal age — normal progress children
- (6) Over-age — normal progress children
- (7) Under-age — slow progress children
- (8) Normal age — slow progress children
- (9) Over-age — slow progress children

The age-progress record of a 7A Grade. — The age-progress record of the 7A Grade of the Madison School may be first arranged as in Table XVI, where are shown the facts of age and progress in respect to normality for each individual child. The date when the record is being made may be considered to be February 15, 1920. In the determination of ages, the pivotal date used is March 1, 1920. The ages are computed according to Table VII. The normal ages for the 7A Grade are $12\frac{1}{2}$ and 13 years, as the "A" section is here considered as advanced section of the seventh grade. These ages, it should be recognized, have a spread from 12 years 3 months to 13 years 3 months. The

completed age-progress record of this 7A grade may be compiled from these individual data. Table XVII presents this record with the designating number of each child located in one of the nine divisions into which a combined age-progress study may divide a class.

TABLE XVI

INDIVIDUAL RECORDS OF AGE AND PROGRESS OF GRADE 7A, MADISON SCHOOL,¹ FEBRUARY 15, 1920

PUPIL No.	AGE	AGE STATUS	PROGRESS ²	PUPIL No.	AGE	AGE STATUS	PROGRESS
1	12½ ³	N	N	19	12½	N	S
2	14½	O	S	20	12½	N	N
3	13	N	S	21	12½	N	S
4	15	O	S	22	12½	N	S
5	15	O	N	23	15	O	S
6	12	U	R	24	13	N	S
7	15	O	S	25	11½	U	S
8	15½	O	S	26	13	N	N
9	11½	U	N	27	12½	N	N
10	16	O	S	28	12½	N	S
11	14½	O	S	29	14½	O	S
12	12½	N	N	30	11½	U	N
13	13	N	N	31	12½	N	N
14	12½	N	R	32	15½	O	S
15	12	U	N	33	13	N	S
16	14½	O	S	34	13	N	N
17	13	N	S	35	14½	O	S
18	14½	O	S				

N — Normal. O — Over-age. U — Under-age. S — Slow progress.
R — Rapid progress.

¹ This is the same class as listed in Table XIII with the omission of the pupils' names.

² Data obtained from Table XIII.

³ Children who are of normal age in a 7A grade are included in the ages 12½ and 13 years.

TABLE XVII

AGE PROGRESS RECORD

GRADE 7A

MADISON SCHOOL

Normal Age Entrance Limits

12½ years of age (including all children whose ages on March 1, 1920, were included between 12 yr. 3 mo. and 12 yr. 9 mo.)

13 years of age (including all children whose ages March 1, 1920, were included between 12 yr. 9 mo. and 13 yr. 3 mo.)

	UNDER-AGE	NORMAL AGE	OVER-AGE
RAPID PROGRESS	6 ¹	14	
NORMAL PROGRESS	9 — 15 — 30	1 — 12 — 13 20 — 26 — 27 31 — 34	5
SLOW PROGRESS	25	3 — 17 — 19 21 — 22 — 24 28 — 33	2 — 4 — 7 — 8 10 — 11 — 16 — 18 23 — 29 — 32 — 35

¹ Each of these numbers represents one child of Table XIII.

Analysis of age-progress records. — This hypothetical age-progress record of Grade 7A, Madison School, shows conditions very similar to those which may be discovered in many classrooms. In the “over-age-slow progress” and “normal-age-slow progress” groups has been found a majority of the class, *i.e.*, 20 children out of 35. The teacher’s problem now becomes one of special treatment of these retarded children either with the purpose of assisting them in regaining their “normal progress status” or in adjusting the work of the various classroom subjects in the aim of preventing future retardation. Consideration of individual problems in the light of this class analysis will also include queries involving even a more rapid progress on the part of the two children who have already advanced at more than normal speed — as well as the possibility of double promotions on the part of one or more of the twelve children who are catalogued as having maintained a normal progress up to this date. It should be borne in mind that the charge frequently made against school systems to the effect that there is more retardation in the case of the bright child than in the case of the backward child may have considerable truth in it.

Determination of the incidence of retardation. — Teachers may frequently assist in the elimination of most retardation in a school by discovering those places in the course of study where maxima of retardation occur. It is of value to know in what grades and subjects children have tended to find the greatest difficulties and hence have tended to slow up their normal progress. It is clear that a simple comparison of the number of non-promotions occurring in each previous grade may bring to light some of the

problems. This comparison becomes more valuable as it tends to include similar studies of all of the classes of one school. In the case of the 7A grade of the Madison School, the teacher may well profit by the summary of Table XVIII. It is recognized that when in such a study the retardation has occurred elsewhere than in the school under discussion account should be taken of this fact.

TABLE XVIII

SHOWING WHERE THE CHILDREN OF THE 7A GRADE, MADISON SCHOOL, FOUND PROMOTION MOST DIFFICULT

SKIPS AND NON-PROMOTIONS OCCURRING IN	NON-PROMOTIONS				
	Single	Double	Total	Per Cent	Skips
Grade 1B . . .	10		10	13.9	1
Grade 1A . . .	3		3	4	1
Grade 2B . . .	4		4	5.5	1
Grade 2A . . .	3		3	4	
Grade 3B . . .	4		4	5.5	2
Grade 3A . . .	2		2	2.8	
Grade 4B . . .	5		5	7	
Grade 4A . . .	4	1	5	5.5	1
Grade 5B . . .	2	1	3	2.8	2
Grade 5A . . .	4		4	5.5	1
Grade 6B . . .	7		7	9.7	
Grade 6A . . .	9		9	12.5	
Grade 7B . . .	7		7	9.7	3
Grade 7A ¹ . . .	5	1	6	8.3	
Total . . .	69	3	72		12

¹ Record of this grade would not be complete until all children had passed out of it.

The children of this group have apparently met with the greatest difficulties in Grade 1B, where 13.9 per cent of the total number of non-promotions occurred, Grade 6A, where 12.5 per cent of the total occurred, and Grades 6B and 7B, in each of which 9.7 per cent is found. Should this prove to be true of all classes of a school it becomes clear that a very definite problem is presented to the teaching group for solution. Such a problem involves a thorough and detailed discussion of the course of study with a revision tending toward actual adaptation of the curriculum to the special needs of the children attending the schools. The grades which are included within the term "Incidence of Retardation," *i.e.*, those causing the largest amounts of non-promotions, will require special attention.

Difference in subject failures. — It is conceivable that a knowledge of differences in subject failures made by a class group over a period of years may have a vital bearing upon the teaching of such a group. A teacher may quite naturally be expected to inquire whether a course of study had presented to the children of his class in their progress from grade to grade greater difficulties in the field of arithmetic than in English, greater difficulties in geography than in history or greater difficulties in one of any two subjects in which comparison might be desirable. If the subject of arithmetic had presented the greatest difficulty of all of the elementary subjects as evidenced by the percentage of children of the entire group who had failed this particular subject one or more times during their previous school career, it is evident that the teacher's attack upon the arithmetic problem may be made in an entirely different way from the attack that he might normally make.

It is also possible for a teacher with the knowledge of subject failures at hand to interpret the course of study in a way which would tend toward its betterment for future

TABLE XIX

SUBJECT FAILURES OF AN EIGHTH GRADE CLASS IN ALL GRADES
FROM THIRD TO SEVENTH INCLUSIVE

Pupils who Have Failed Subjects in the Various Grades

NAME OF PUPIL	3D GRADE	4TH GRADE	5TH GRADE	6TH GRADE	7TH GRADE
Stephen Rafferty .	R	—	R A	A	A
Edgar Perry . .	A	—	G	G	G
Edith Olds . . .	—	—	—	—	—
Everard Woods .	—	Sp	Sp	Sp L	Sp
Beatrice Baker .	A	A	—	H	H
Kent Lutey . . .	—	—	—	—	—
Virginia Dickerson	—	—	—	—	—
Ellis Spurrier . .	—	A	A Sp	Sp	A
Edward Woods .	—	—	H	H	Ci Sc
Virginia Paul . .	R	R	L	L	L
Louise Hirchey .	—	—	G	G	G
Harold Tolly . .	—	Sp L	Sp L	Sp	Sp
Ethan Laidlaw .	—	—	—	—	—
John Conway . .	—	—	A	—	—
Russell Worth . .	R	R	—	—	—
Cora Evans . . .	—	A	—	A	A
Ellen Johnson . .	W	W	—	—	Co

Code and Number of Failures in Each Subject.

R — Reading	— 6	Ci — Civics	— 1
L — Language	— 6	A — Arithmetic	— 13
Sp — Spelling	— 10	W — Writing	— 2
G — Geography	— 6	Sc — Science	— 1
H — History	— 4	Co — Cooking	— 1

children. Such a study of subject failures may well be put in the form of Table XIX. The analysis that is thus made of the ability of each child in the various school subjects as that ability has been interpreted by the child's former teachers, will also be of no inconsiderable assistance to both teacher and pupil. In the suppositional case presented, the subject of arithmetic has had 25 per cent of all of the subject failures during the previous career of this class group. This subject appears to offer the greatest obstacles to this group's progress. The teacher's approach to the arithmetic instruction should, therefore, be more sympathetic, the reviews more frequent and all inclusive, and the treatment more thorough than might be necessary in a subject in which the children evidently found less difficulty. It is also reasonable to suppose that a preponderance of failures in one subject may be due to the unnecessary difficulty of the subject matter presented.

Differences in achievement as measured by standard scales and tests. — The introduction of standard scales and tests as administrative and supervisory tools for the measurement of the achievement of pupils has compelled a far greater recognition than has ever been given before to the individual differences that exist in all grades and in all age groups. The types of scales and tests which have to-day become available for use on the part of classroom teachers are discussed in Chapter IX of this book. The immediate purpose of mentioning these tests and scales at this point is that they afford the classroom teacher the best means of actually determining the achievement possibilities of the pupils of his group. The classroom teacher who is entirely lacking in the knowledge of the

TABLE XX¹

READING ALPHA 2

Scores made by grades tested in Paterson. St. Paul scores² and Thorndike standards

SCHOOL	4B	4A	5B	5A	6B	6A	7B	7A	8B	8A
B		4.70	5.04	5.18	6.22		6.46		7.01	
O	4.48			5.42			6.30	6.67		6.51
U		4.47								
C	4.56			5.50	6.50	6.91			7.02	
I			5.38				7.15			7.35
V		5.63						6.61		
D								6.86	6.91	6.98
P	5.04									
E		4.66	5.12			6.13				
Q						6.41				
W				5.72						
R	4.22		5.53		5.84	6.13		6.86	6.79	6.72
X		5.18					6.38			
Y				5.10						
A	3.71		4.64							
G					6.15				6.47	
M						6.25		6.49		6.82
S	5.43	5.30	4.94	5.28	6.45		6.60			
H						6.23		6.00	6.67	6.33
Paterson	4.74	4.83	5.12	5.44	6.11	6.37	6.51	6.57	6.82	6.85
St. Paul		5.57		5.72		6.71		7.17		7.75
Thorndike		5.25		5.75		6.50		7.00		7.50
Difference between Paterson and Thorndike		-4.2		-3.1		-1.3		-4.3		-6.5

¹ Paterson, N. J. School Survey, Board of Education, Paterson, N. J., 1918.

² St. Paul Survey, Dept. of Education, St. Paul, Minn., 1917.

ends to be attained by the use of standard scales, who is not familiar with their derivation, and who has had no participation in their use will find himself greatly handicapped in his profession. The teacher owes it to the children of his group as well as to the teaching profession to become expert enough in the administration of standard tests and scales so that he may be permitted to measure with far greater accuracy than he has ever before the work and progress of the children whom he is instructing. Such measurement need involve only a few tests each year but should be made in such a scientific manner that the results cannot be questioned and also so that comparison may be made with the results obtained in other classes and other school systems. It seems quite desirable for a classroom teacher to be able to measure his class in such terms so as to determine whether that class has made the progress which should have been made.

Differences in reading ability. — In a study of reading with the use of the Thorndike Reading Scale, Alpha 2, made in the city of Paterson, N. J., in the spring of 1919, the results of Table XX were secured. The scores for various grades in nineteen different schools are given. Comparisons with Professor Thorndike's standards for each grade and with the superior results of a similar study of the schools of St. Paul, Minn., made in 1917, are also made possible.

The ability in reading in the different schools varied greatly. There is evidence that there is a difference in reading ability between the same grades of different schools which is as great as the difference involved in a span of two years of school work. This may be seen from Table XXI, showing the situation in four Paterson schools.

TABLE XXI

SCHOOL H	SCHOOL C	SCHOOL I	SCHOOL R
4B — 5.43 8A — 6.32	4B — 4.56 8B — 7.02	5B — 5.38 8A — 7.35	4B — 4.22 8A — 5.72
Gain in $4\frac{1}{2}$ yr. .89	Gain in 4 yr. 2.46	Gain in $3\frac{1}{2}$ yr. 1.97	Gain in $4\frac{1}{2}$ yr. 2.50

Teacher's use of standard scales and tests. — The classroom teacher should be able to assist in a similar examination of the results that are being obtained not only in reading but in all subjects in his own school. The question that the progressive teacher is always anxious to answer is why is there a progress of 2.46 points on the scale in the case of School C when there is a progress of only .89 point on the scale in the case of another school where one half year more was involved in the period studied. The teacher should firmly fix in mind that progress over a period of time is what should be measured in all school work and not merely the attainment of a class group. In the measurement of his own class a teacher may find it possible to make the complete study of Table XXII.

In this table are included the results of thirteen tests of a group of children of the fifth grade. These scores of individual pupils were transmuted into the ranks of all pupils in the class group. The position of each child in the class was then determined by the total of all of the rankings which he secured on the thirteen tests. This study was made in the fall of the school year. Another study similar to this made in the spring might easily determine

TABLE XXII

INDIVIDUAL PUPILS' SCORES GRADE 6B — WAKEFIELD SCHOOL
Nov. 28-29, 1919

NAMES OF PUPILS	WOODY—ADDITION	WOODY—SUBTRACTION	WOODY—MULTIPLICATION	WOODY—DIVISION	STONE REASONING	TRABUE COMPLETION	TRABUE D COMPLETION	"100 DEMONS"	AYRES SPELLING	THORNDIKE HANDWRITING	COMPOSITION "NASSAU CO."	THORNDIKE VISUAL VOCABULARY	THORNDIKE READING ALPHA 2
1. Louise Martine	33	34	34	29	7	15	16	98	90	12	3.8	49	5.80
2. Ruth Ayres . .	34	28	22	23	6	11	14	69	65	9	3.8	44	6.52
3. Raymond Graham	34	27	28	27	7	10	12	81	55	9	5	98	6.29
4. Frederick Klein	18	21	19	16	5	8	11	72	50	11	3.8	54	6.85
5. Elizabeth Barr	25	26	31	28	5	16	12	86	85	11	5	84	7.01
6. Chas. Clarke . .	26	27	26	26	8	14	16	97	100	11	5	101	7.11
7. Howard Eastwood	35	31	33	29	8	14	16	95	100	10	5	92	7.00
8. Chester Huber	36	29	24	24	2	11	15	96	85	9	3.8	54	6.78
9. Mary Ferguson	29	18	27	29	6	14	15	94	100	13	3.8	78	6.68
10. Ruth Farley . .	32	32	28	29	8	12	12	93	100	11	3.8	21	7.00
11. Sarah Seanor . .	34	27	32	25	3	13	15	96	100	12	6	88	6.66
12. Frank Stewart .	34	28	28	26	8	10	13	79	75	10	3.8	60	6.53
13. Lila Jackson . .	26	25	21	25	5	11	15	98	95	12	5	93	6.69

by a difference in the final rankings allotted to each individual pupil which child had succeeded in making the greatest progress during the school year. By using this plan it is conceivable that children may frequently be inspired to do better school work not only because they will find an opportunity to do work superior to that of any other child, but also because this plan affords them suffi-

cient opportunity for bettering their own records. This last incentive is probably the best incentive that can be placed before children.

Differences in the intelligence of children. — The advance which has recently been made in the field of the psychological testing of intelligence will have its effect in due course of time on the work of every classroom teacher. The full import of the extensive use of mental tests by the U. S. Army authorities in 1917-18 may only be realized by reviewing the specific purposes for which these tests were given. A Bulletin¹ from the Surgeon General's office of the United States states these purposes to lie:

(1) In the discovery of men whose superior intelligence suggests their consideration for advancement;

(2) In the prompt selection and assignment to Development Battalions of men who are so inferior mentally that they are suited only for selected assignments;

(3) In forming organizations of uniform mental strength where such uniformity is desired;

(4) In forming organizations of superior mental strength where such superiority is demanded by the nature of the work to be performed;

(5) In selecting suitable men for various army duties or for special training in colleges or technical schools;

(6) In the early formation of training groups within regiment or battery in order that each man may receive instruction and drill according to his ability to profit thereby;

(7) In the early recognition of the mentally slow as contrasted with the stubborn or disobedient;

¹ Army Mental Tests, Washington, D. C., Nov. 22, 1918.

(8) In the discovery of men whose low-grade intelligence renders them either a burden or a menace to the service.

The classroom teacher fully realizes that the reasons assigned for this military application of the tests are valid in respect to his own problem. The further significance of mental or psychological testing is made clear by the adoption of new admission regulations by American universities in which the results of intelligence tests rather than the results of written examinations will be the determining factor.

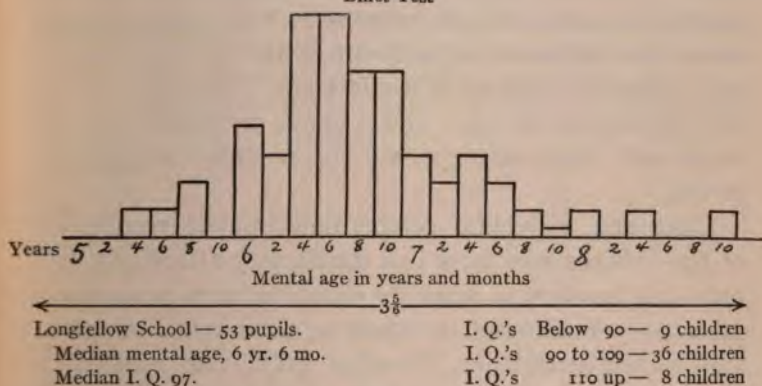
Intelligence quotients or I. Q.'s. — The assumption that all children might be able to progress with equal rapidity under conditions that had eliminated such more evident factors of retardation as differences in physical powers, in instruction, and the like cannot be borne out by the facts. Psychological testing of school children has shown that the mental abilities of an unselected group will extend over a range similar to that secured by Dr. L. M. Terman in his testing of a group of 905 unselected children 5 to 14 years of age.¹ Dr. Terman's curve shows no abrupt division between different mental types but a close approximation to the normal curve of frequency for his entire group. The intelligence quotients (or I. Q.'s) for the group were found to range from 56-145. The greatest percentage of I. Q.'s ranged from 96-105 with a gradual tapering off in each direction. The I. Q. is determined by dividing the mental age of a child by his chronological age. The mental age is secured as the result of a series of tests given the child. These tests are varied in nature and are utilized

¹Terman, *The Measurement of Intelligence*, Houghton Mifflin Co., pp. 66 ff.

for determining the child's ability in various fields, such as comprehension, discrimination, memory, and the like.

Frequently as a result of the mental testing of 30 or 40 pupils, the differences of Fig. II¹ will be observed.

FIGURE II
Binet Test



Here is good ability — 14 pupils should be studied with view to acceleration.

These differences were those found in the measurement of fifty-three pupils in the Longfellow School of Oakland, Cal., in 1917-18. In this school system, it has been considered desirable to measure the mentality of each child. The figure represents the results of part of this extensive program. Other classes measured in this system show entirely different distributions which emphasized fully the need for such type of measurement in the treatment of any class group.

Differences in the attendance of children. — It is very conceivable that differences which may exist in the achievements of children may be attributed in part to the amount

¹ 1917-18 Annual Report of Supt. F. M. Hunter, Oakland, Cal.

of instruction the children have, expressed in terms of the number of days school has been attended. The child who for any reason is absent from school ten, twenty, thirty, or more days of a school year of 200 days gives his classmates a handicap which he can overcome only with great difficulty. Upon the classroom teacher devolves the duty of sympathetic and constant coöperation with the attendance officer and attendance department, to the end that absence from school be reduced to a minimum. The wise teacher will develop on the part of his pupils an esprit de corps which will constantly contend for a perfect attendance record.

Class and individual competitions, public recognition of the children who have had satisfactory attendance records, and the effort to make the classroom work increasingly attractive will all tend to reduce to a minimum the problems of non-attendance. Teacher, pupil, and attendance officer must learn to think in terms of a minimum permissible loss of time between the period when a child is reported absent and the period he returns to school if he has willfully absented himself without valid reason. A standard of twenty-four hours or less set by such coöperating forces will soon make the child realize the futility of being absent without cause. Teachers and pupils may also more clearly understand their attendance problem when it is presented in the form of Table XXIII.

In this chapter it has been the effort of the authors to unfold many of the underlying problems connected with classroom teaching with which, it has been found, teachers are none too familiar. The teacher's task is not intelligently performed until the important educational facts

TABLE XXIII

RECORD OF ATTENDANCE AT SCHOOL FOR CLASS 6A

<i>Children Attending</i>	<i>No. of Days in School</i>					
	<i>1917-18</i>	<i>1917-18</i>	<i>1918-19</i>	<i>1918-19</i>	<i>1919-20</i>	<i>1919-20</i>
	<i>1st Term</i>	<i>2d Term</i>	<i>1st Term</i>	<i>2d Term</i>	<i>1st Term</i>	<i>2d Term</i>
0-10 days . . .						
11-20 days . . .						
21-30 days . . .						
31-40 days . . .	2					
41-50 days . . .	4	5				
51-60 days . . .	6	6	6	5		
61-70 days . . .	10	7	6	7	4	
71-80 days . . .	8	10	9	8	12	
81-90 days . . .	8	6	10	11	10	
91-100 days . . .	3	3	6	6	11	
Total number in class	41	37	37	37	37	
Median ¹ number of days' attendance for each grade	69.5	71.5	78.2	79.1	83.5	

The table may be read as follows: of the children in this 6A class, two attended school 31-40 days during the first term of the school year 1917-18, four attended 41-50 days, etc. The class score for this same term is 69.5 days. Each successive term shows an improvement in the class score or median. The school records will provide the facts needed for this tabulation.

¹ For calculation of the median consult ch. IX.

concerning each child have been made available. The problems of guidance and instruction of no two class groups are exactly alike. It is only as the teacher ascertains the differences in needs and their causes that a maximum of good teaching and of pupil achievement will result.

QUESTIONS

1. What differences found to exist among individuals of a class should be made a matter of investigation by a teacher at the beginning of a semester's work?
2. The standardization of the definition of ages of school children will insure the validity of comparisons between grades and schools involving the element of age. What is a fair definition of five years of age? Of ten years of age?
3. What provisions are made in your community for safeguarding the records of birth of the children of the community?
4. Why should the problem of retardation be given the utmost consideration by all teachers?
5. Define the incidence of retardation.
6. What relationship can be established between the retardation of pupils and their elimination from school?
7. In the construction of an age table for the second semester of a school year, why is it desirable to calculate age as of March 1?
8. Determine the number of children over-age, of normal age, and under-age, in your own class group.
9. Compile the progress record for the children of your class group following the model in this chapter.
10. How may an age-progress record be utilized for the division of children of a class into groups of similar ability?
11. What is the average number of years required by all children to complete the eight grades of work in your elementary school?
12. Determine the subject which has been responsible for the largest number of non-promotions in your school over a period of years. Can you discover any reasons why this subject should be permitted to offer the greatest obstacle to the progress of children?

13. Determine the percentage of over-age children found in the fall of 1919 among the thirty-five members of the 8B grade listed here:

NAME OF PUPIL	DATE OF BIRTH		
	Year	Month	Day
1 Allison, Allen	1907	Feb.	21
2 Batcheller, James	1906	Aug.	6
3 Boscow, Raymond	1905	Oct.	3
4 Cramer, Lester	1906	Dec.	21
5 Crosgrove, Alberta	1906	May	3
6 Daley, Frances	1904	July	2
7 Daley, Clara	1905	Oct.	21
8 Denson, Allen	1906	Apr.	28
9 Donovan, Michael	1905	Dec.	2
10 Drake, Harold	1906	Oct.	13
11 Elliott, Louise	1906	Dec.	1
12 Frey, George	1905	Nov.	29
13 Gibson, Floyd	1905	June	1
14 Goulding, Donald	1906	Sept.	22
15 Hanson, Florence	1906	June	5
16 Heald, Beatrice	1905	Dec.	21
17 Hudson, Charles	1907	June	30
18 Larson, Ellen	1905	Dec.	30
19 Levandoski, Stanley	1907	Apr.	17
20 Light, Vera	1907	Jan.	2
21 Luce, Esther	1906	July	6
22 Mathewson, Howard	1904	Dec.	5
23 Meahen, Nellie	1906	Jan.	2
24 Miller, Marie	1906	Dec.	5
25 Morse, Frank	1906	July	25
26 Nelson, Henry	1905	Dec.	8
27 Olson, Eleanor	1905	Sept.	6
28 Player, Jessie	1904	Oct.	30
29 Potter, Burt	1905	Dec.	12
30 Randall, Theodore	1907	Dec.	1
31 Russell, Isabel	1905	Nov.	25
32 Sloan, Peter	1905	Aug.	24
33 Thompson, Gerald	1906	Feb.	12
34 Williams, Pauline	1905	Dec.	29
35 Wolfe, Jonas	1906	Mar.	15

14. Determine the per cent of children making slow progress, the per cent making normal progress, and the per cent making rapid progress for any of the grades named in the following table:

[illegible]

CHAPTER IX

MEASURING THE ACHIEVEMENTS OF CHILDREN

TEACHERS have always sought to measure the achievements of their pupils. The only evidence that we can have of the success of education is to be found in the changes which are brought about in the habits of our pupils, in their knowledge or ability to solve problems, or in their power of appreciation. In our practice we have tended to confine our measurements largely to examinations which test knowledge, memory, or habit. We have quite commonly, at the same time, recorded judgments with respect to the character of the individual pupil. We have given marks for deportment, and have estimated the probable success of children in continuing their school careers or in engaging in their life work. These examinations and these estimates that we have made concerning the ability of children have been the basis upon which they have been moved from grade to grade in a school, or transferred from one type of school to another.

The inexactness of examinations. — Teachers have long recognized the difficulty of comparing results upon the basis of examinations. Even though the same general division or part of a field has been the subject of the examination, the tests which have been set have varied so greatly that it has been practically impossible to compare children from year to year or from different school systems. There has been another difficulty in the variation which occurs in the marks given by teachers to the work done by their pupils.

Most conscientious teachers will vary by as much as twenty-five per cent of the highest mark given to a paper in rating the same examination. It will very frequently happen that the same teacher, marking a paper at intervals of a month or two, will vary from the mark that was originally given. There is, as well, the difficulty of giving a percentage value to the achievement of boys and girls, which may very well mean that over a period of years they will continue to be rated at seventy, eighty or ninety, without any suggestion in the mark given of the progress that has been made.

Standard tests. — Much can be gained by having both children and parents understand just what the progress of our pupils has been, or what their achievements are at any particular time. The standard tests which have been prepared for use in our schools provide a means of measurement which makes possible this significant type of report. We may confidently expect that children will be appealed to by the motive which is established when they are asked to improve their handwriting from Quality 10 on the scale to Quality 11 or 12. We have in the past all too frequently asked boys and girls to achieve perfection in their handwriting, with the result that they are completely discouraged and quit trying. In like manner, in arithmetic we have had a very hazy notion of what degree of speed and accuracy we were requiring of boys and girls in their work in the fundamentals. We now have tests which will enable us to measure accurately both the speed with which they do the work and the degree of accuracy which they achieve. Both pupil and parent can understand a measurement which suggests that the pupil has, in a period of six minutes, moved

from an achievement of six problems done correctly to an achievement of ten or twelve, or even fourteen problems solved without mistakes within the same time limit.

Tests of speed and accuracy. — Some of the tests which are commonly used are valuable primarily for the purpose of indicating the speed and accuracy with which a given task is completed. The Courtis tests in arithmetic¹ consist of a series of problems in the fundamentals that are of equal difficulty. In giving the test one allows only a certain number of minutes. It is then a very simple matter to score the results and to discover how many problems are solved correctly by each pupil in the class in the time given. There may be recorded, as well, the number of problems attempted during the same length of time. See the Courtis test in addition, with the directions for giving the test, on page 168.

Tests for the diagnosis of deficiencies. — A different type of test in arithmetic seeks to discover not primarily the speed with which children work but the place in the scheme of work in the fundamentals where the pupil is unable to carry through the process. This sort of test is intended primarily for the purpose of diagnosing the difficulty that pupils encounter so that teachers may place the emphasis in their teaching upon that part of the subject with which the children have difficulty. A good example of this type of test is the Woody test in arithmetic.² It will be noted in the part of the test given below that every type of multiplication

¹ Courtis Standard Research Tests in Arithmetic, published by S. A. Courtis, 82 Eliot Street, Detroit, Mich.

² The Woody tests in arithmetic, published by the Bureau of Publications, Teachers College, Columbia University.

example, from the very simplest combination to the very complex type of problem, is included.

COURTIS STANDARD RESEARCH TESTS

Arithmetic. Test No. 1. Addition.

Series B

Form 1

SCORE

No. Attempted.....

No. Right.....

You will be given eight minutes to find the answers to as many of these addition examples as possible. Write the answers on this paper directly underneath the examples. You are not expected to be able to do them all. You will be marked for both speed and accuracy, but it is more important to have your answers right than to try a great many examples.

927	297	136	486	384	176	277	837
379	925	340	765	477	783	445	882
756	473	988	524	881	697	682	959
837	983	386	140	266	200	594	603
924	315	353	812	679	366	481	118
110	661	904	466	241	851	778	781
854	794	547	355	796	535	849	756
965	177	192	834	850	323	157	222
344	124	439	507	733	229	953	525

537	664	634	572	226	351	428	862
695	278	168	254	880	788	975	159
471	345	717	948	663	705	450	383
913	921	142	529	819	174	194	451
564	787	449	936	779	426	666	938
932	646	453	223	123	649	742	433
559	433	924	358	338	755	295	599
106	464	659	676	996	140	187	172
228	449	432	122	303	246	281	152

677	223	186	275	432	634	547	588
464	878	478	521	876	327	197	256
234	682	927	854	571	327	685	719
718	399	516	939	917	394	678	524
838	904	923	582	749	807	456	969
293	353	553	566	495	169	393	761
423	419	216	936	250	401	525	113
955	756	669	472	833	885	240	449
519	314	409	264	318	403	152	122

Name..... Age last birthday.....
 Boy or Girl.....
 School..... Grade..... Room.....
 City..... State..... Date.....

SERIES A

MULTIPLICATION SCALE

By CLIFFORD WOODY

Name.....

When is your next birthday?..... How old will you be?.....

Are you a boy or girl?..... In what grade are you?.....

(1) $3 \times 7 =$	(2) $5 \times 1 =$	(3) $2 \times 3 =$	(4) $4 \times 8 =$	(5) 23 <u>3</u>	(6) 310 <u>4</u>	(7) $7 \times 9 =$
(8) 50 <u>3</u>	(9) 254 <u>6</u>	(10) 623 <u>7</u>	(11) 1036 <u>8</u>	(12) 5096 <u>6</u>	(13) 8754 <u>8</u>	(14) 165 <u>40</u>
(15) 235 <u>23</u>	(16) 7898 <u>9</u>	(17) 145 <u>206</u>	(18) 24 <u>234</u>	(19) 9.6 <u>4</u>	(20) 287 <u>.05</u>	(21) 24 <u>2½</u>
(22) $8 \times 5\frac{3}{4} =$	(23) $1\frac{1}{4} \times 8 =$	(24) 16 <u>2½</u>	(25) $\frac{7}{8} \times \frac{3}{4} =$	(26) 9742 <u>59</u>	(27) 6.25 <u>3.2</u>	(28) $.0123$ <u>9.8</u>
(29) $\frac{1}{8} \times 2 =$	(30) 2.49 <u>36</u>	(31) $\frac{12}{25} \times \frac{15}{32} =$	(32) $6 \text{ dollars } 49 \text{ cents}$ <u>8</u>	(33) $2\frac{1}{2} \times 3\frac{1}{2} =$	(34) $\frac{1}{2} \times \frac{1}{2} =$	
(35) $987\frac{3}{4}$ <u>25</u>	(36) $3 \text{ ft. } 5 \text{ in.}$ <u>5</u>	(37) $2\frac{1}{4} \times 4\frac{1}{2} \times 1\frac{1}{2} =$	(38) $.0963\frac{1}{8}$ <u>.084</u>	(39) $8 \text{ ft. } 9\frac{1}{2} \text{ in.}$ <u>9</u>		

The problems on this test are not only arranged so as to discover the particular difficulties which children may have, but also are placed in the order of their difficulty. This arrangement will encourage a pupil by giving him at the very beginning of his test that which is very simple and easy to do. It is not to be supposed, of course, that in every case all of the problems will be solved correctly until a par-

ticular difficulty presents itself beyond which the pupil cannot go. It will ordinarily be discovered that pupils will be successful up to a certain point in the series and that then they will be able to solve particular problems in the remainder of the series as they may have had experience and training.¹

Tests in reading. — In the field of reading two or three different types of tests have been undertaken. There is a possibility of discovering something of the ability of an individual to read by having him read directions which are given at the head of a sheet and to classify words which are listed as belonging to different groups. A test of this sort follows:²

THORNDIKE READING SCALE A VISUAL VOCABULARY

Write your name here.....

Write your age here.....years.....months.

Look at each word and write the letter F under every word that means a *flower*.

Then look at each word again and write the letter A under every word that means an *animal*.

Then look at each word again and write the letter N under every word that means a *boy's name*.

Then look at each word again and write the letter G under every word that means a *game*.

Then look at each word again and write the letter B under every word that means a *book*.

¹ A similar type of test was given by Dr. C. H. Judd in the Cleveland, Ohio, Survey. See volume entitled "Measuring the Work of the Public Schools," p. 290.

² Thorndike Reading Scale A, Visual Vocabulary, published by the Bureau of Publications, Teachers College, Columbia University.

Then look at each word again and write the letter T under every word like *now* or *then* that means something to do with *time*.

Then look at each word again and write the word GOOD under every word that means something *good to be* or *do*.

Then look at each word again and write the word BAD under every word that means something *bad to be* or *do*.

4. camel, samuel, kind, lily, cruel
5. cowardly, dominoes, kangaroo, pansy, tennis
6. during, generous, later, modest, rhinoceros
7. claude, courteous, isaiah, merciful, reasonable
8. chrysanthemum, considerate, lynx, prevaricate, reuben
9. ezra, ichabod, ledger, parchesi, preceding
10. crocus, dahlia, jonquil, opossum, poltroon
- 10.5 begonia, equitable, pretentious, renegade, reprobate
11. armadillo, iguana, philanthropic

It will be noted that in this test the pupil must be able to read instructions and to follow them, and that he must, as well, recognize each of the words as belonging to a particular group.

A different type of test is found when pupils are asked to read a paragraph and then to write answers to questions on the content of the paragraph. There are sets of paragraphs, both easier and more difficult in this series of tests. It may be remarked that if the paragraphs to be interpreted become sufficiently technical or deal sufficiently in abstractions, the limit of ability to read is reached by pupils in elementary or high schools. A part of one of these tests follows:¹

¹ Thorndike's Scale Alpha 2, Part II, for Measuring the Understanding of Sentences, published also at Teachers College, Columbia University.

Other reading tests which have been used are as follows: Kansas Silent Reading Test, published by the University of Kansas, Lawrence, Kas., and Gray's Reading Test, University of Chicago.

SCALE ALPHA 2. FOR MEASURING THE UNDERSTANDING OF SENTENCES. PART II

Write your name here.....

Write your age.....years.....months.

SET IV. DIFFICULTY 7

Read this and then write the answers to 1, 2, 3, and 4. Read it again if you need to.

You need a coal range in winter for kitchen warmth and for continuous hot-water supply, but in summer when you want a cool kitchen and less hot water, a gas range is better. The xyz ovens are safe. In the end-ovens there is an extra set of burners for broiling.

1. What effect has the use of a gas range instead of a coal range upon the temperature of the kitchen?
2. For what purpose is the extra set of burners?.....
3. In what part of the stove are they situated?.....
4. During what season of the year is a gas range preferable?.....

Read this and then write the answers to 5, 6, and 7. Read it again if you need to.

Hay fever is a very painful, though not a dangerous, disease. It is like a very severe cold in the head, except that it lasts much longer. The nose runs; the eyes are sore; the person sneezes; he feels unable to think or work. Sometimes he has great difficulty in breathing. Hay fever is not caused by hay, but by the pollen from certain weeds and flowers. Only a small number of people get this disease, perhaps one person in fifty. Most of those who do get it can avoid it by going to live in certain places during the summer and fall. Almost every one can find some place where he does not suffer from hay fever.

5. What is the cause of hay fever?.....
6. How large a percentage of people get hay fever?.....
7. During what seasons of the year would a person have the disease described in the paragraph?.....

SET V. DIFFICULTY 8

Read this and then write the answers. Read it again if you need to.

It may seem at first thought that every boy and girl who goes to school ought to do all the work that the teacher wishes done. But sometimes other duties prevent even the best boy or girl from doing so. If a boy's or girl's father died and he had to work afternoons and evenings to earn money to help his mother, such might be the case. A good girl might let her lessons go undone in order to help her mother by taking care of the baby.

1. What is it that might seem at first thought to be true, but really is false?
2. What might be the effect of his father's death upon the way a boy spent his time?
3. Who is mentioned in the paragraph as the person who desires to have all lessons completely done?
4. In these two lines draw a line under every 5 that comes just after a 2, unless the 2 comes just after a 9. If that is the case, draw a line under the next figure after the 5:

5 3 6 2 5 4 1 7 4 2 5 7 6 5 4 9 2 5 3 8 6 1 2 5 4 7 3 5 2
3 9 2 5 8 4 7 9 2 5 6 1 2 5 7 4 8 5 6

Read this and then write the answers to 5, 6, 7 and 8. Read it again if you need to.

In Franklin, attendance upon school is required of every child between the ages of seven and fourteen on every day when school is in session unless the child is so ill as to be unable to go to school, or some person in his house is ill with a contagious disease, or the roads are impassable.

5. What is the general topic of the paragraph?
6. How many causes are stated which make absence excusable?
7. What kind of illness may permit a boy to stay away from school, even though he is not sick himself?
8. What condition in a pupil would justify his non-attendance?

The measurement of handwriting.—In handwriting charts have been prepared which have on them samples of

handwriting extending all the way from penmanship which is practically a scrawl, that cannot be interpreted, to that type of penmanship which is perfect. Most teachers have had experience with this type of scale. It is very interesting to observe the eagerness with which children will measure their own handwriting and the satisfaction which comes to them in finding that they have really progressed a step or two in a relatively short time. In one school system the average progress for all children above the fourth grade increased as much in twelve weeks under the stimulus which came from measuring the results by a handwriting scale as had been accomplished previously in two years. This was established by the fact that at the end of a period of twelve weeks the fourth grade children were writing as well as the sixth grade children had written at the beginning of the test, the fifth grade children were writing as well as the seventh grade, the sixth grade children as well as those in the eighth grade. Measuring handwriting will not, of course, improve the writing of children; it merely provides the incentive. In like manner, in any other field, measurement will not take the place of teaching; it is merely a device used to record achievement or to diagnose the difficulties which the pupils may have.¹

The measurement of English composition. — One of the most complex of the products of our school work is English composition. In order to produce a satisfactory result, a

¹ Two of the most widely used scales for measuring handwriting are Thorndike's Handwriting Scale, published by the Bureau of Publications, Teachers College, Columbia University, New York, and Ayres' Scale for Measuring Handwriting, published by the Russell Sage Foundation, New York.

pupil must not only think clearly, but must be able to express, through his writing, spelling, and punctuation, his thought. It is nevertheless possible to rate compositions in such a way as to indicate the range of achievement in a given class and to compare classes with each other. Compositions varying from that which has no value at all to the achievement of a pupil who has given evidence of very superior ability, are indicated in the scale for measuring composition which follows:¹

NASSAU COUNTY SUPPLEMENT TO THE HILLEGAS
SCALE FOR MEASURING THE QUALITY OF ENGLISH
COMPOSITIONS²

Directions for Measuring: Compare the quality of your composition with the quality of the samples on the scale. Assign to your composition the numerical value of that evaluated sample which most nearly equals it in merit.

WHAT I SHOULD LIKE TO DO NEXT SATURDAY

0. I went going on to the Dox Saturdaye dnd day we the boys and I well going home and I well going the boys. and I will going these read in and they to night. and we or night. I well going a ground shalt and I gone out I will going to shea shouse and I will shoe or the skill of the shea of night.

¹ Nassau County Supplement to the Hillegas Scale for Measuring the Quality of English Compositions, by M. R. Trabue, published by the Bureau of Publications, Teachers College, Columbia University.

The first scale for measuring English composition was that by M. B. Hillegas, published by the Teachers College Bureau of Publications. Another study of the measurement of English composition is that by Ballou, the Harvard-Newton Scale for Measuring English Composition.

² The preparation of this scale and suggested standard medians may be found in the Teachers College Bulletin, entitled Method Supplementing the Hillegas Scale, by M. R. Trabue, Teachers College.

1.1 I intend to mak a snou man and make an fort and fort snou ball at chidern and hau I whist ma frant carolyn cole what were me I will going to the mauiss on Saturday.

Georga will come went me.

at night I will going out went my mother to the marce.

I will mak the snou man and the fort in the moning and in the afternoon I will go to the mauies.

I whist there whest school on Saturday

1.9 one next S aturday I expect to go to the city leve next G aturday to see my ofriend archie king I am going to grow to the baning balys circus with hime next S aturday fefore I go I have to do my jobs feedsing the cows ard horse ard chinkens and geese next Saturday

My friend is a very good fellow to go and see So my mother S aid " If I do my work during Easter week vacation I can go to the barning baley circus with. hime

2.8 Once a pon a time there was a girl. One day she asked me what I was going to do next Saturday so I said, " I am going to go for a swim." And she said, " thats

just were I am going to." next Saterdag came we both went down together. We came home at noon time. after dinner we went to the picktures. There we had a good time. And then came home at night.

3.8 I would like to go out in the after noon and play catching the ball. Go over to Bertha's house and have a few girls to come with me and be on each others side. I have a tennis ball too play with. The game is that one person should stand quite aways from another person and throw the ball too one then another. Someone has to be in the middle and try too get the ball a way from someone then she takes this persons place who she caught the ball from. Then till every person has a chance.

5.0 Next Saturday I should like to go away and have a good time on a farm. I should like to watch the men plowing the fields and planting corn, wheat, and oats and other things planted on farms.

Next Saturday I will go to the Pioneer meeting if nothing happens so that I cannot go. I should like to go swimming but it is not warm enough and I would catch a bad cold. I should like to go to my aunts and drive the horses, I do not drive without some older person with me, so I cannot go very often.

I should like to see my aunts cat and her kittens, too. I think I can, to.

6.0 I should like to join my girl friends, who are going to the city on the 9-05 A. M. train. They are going shopping in the morning and will have lunch to-gether, then they are going to the Hippodrome. After the Hippodrome, they are all going home to dinner to one of the girls houses, she lives on Riverside Drive so they expect to take the " Fifth Avenue Bus " up there. The evening will be devoted to playing games, singing and dancing.

7.2 If I had a thousand dollars to spend, I think I would take a trip to San Francisco by train with the rest of the family, and stop at a sea-side hotel. It would be glorious to see the surf again, and to escape from the cold blustering weather of December for the balmy breezes of the ocean, and the whiff of orange blossoms.

We could take long drives under shady trees, visit the orange and olive groves and bathe in the surf. Think of bathing in the ocean in December!

Coming home again I should enjoy stopping at Yellow Stone Park. It would be lots of fun to camp out, and to ride over the prairies on frisky ponies. It would be very interesting to notice the change of climate as we got farther east, and to go to bed on the train one evening feeling warm, and waking up the next morning feeling very chilly.

I am afraid by the time I would get home a thousand dollars would be pretty well used up; but if not I would like to give a party.

8.0 One Sunday, towards the end of my summer vacation, I was in bathing at the Parkway Baths. In the Brighton Beach Motordrome, a few rods away, an aviation meet was going on. Several times one of the droning machines had gone whirring by over our heads, so that when the buzzing exhaust of a flier was heard it

did not cause very much comment. Soon, however, the white planes of "Tom" Sopwith's Wright machine were seen glimmering above the grandstand. Everyone stood spellbound as he circled the track several times and then headed out to sea. He was seen to have a passenger with him. Suddenly, the regular hum of his motor was broken by severe pops, and the engine ran slower, missing fire badly. In response, to Sopwith's movements, the big flier tilted and swooped down to the beach from aloft like an eagle. The terrified crowd made a rush to get out of the way as the airship came on, but Sopwith could not land on the beach, but skimmed along close to the water instead. Suddenly his wing caught the water, and the big machine somersaulted and sank beneath the waves. The aviators soon came bobbing up and were taken away in a launch, but the accident will not soon be forgotten by those who saw it.

9.0 The courage of the panting fugitive was not gone; she was game to the tip of her high-bred ears; but the fearful pace at which she had just been going told on her. Her legs trembled, and her heart beat like a trip-hammer. She slowed her speed perforce, but still fled industriously up the right bank of the stream. When she had gone a couple of miles and the dogs were evidently gaining again, she crossed the broad, deep brook, climbed the steep left bank, and fled on in the direction of the Mt. Marcy trail. The fording of the river threw the hounds off for a time; she knew by their uncertain yelping, up and down the opposite bank, that she had a little respite; she used it, however, to push on until the baying was faint in her ears, and then she dropped exhausted upon the ground.

NOTE. — The first seven of the above compositions, values 0 to 6.0, were written during the month of April, 1916, by children in the elementary grades of the schools in Nassau County, New York. The last three compositions, values 7.2, 8.0, and 9.0, were selected from compositions which have previously been published by Professor E. L. Thorndike.

The value assigned to "The Hunted Deer" (9.0) is that given it in the Thorndike Extension of the Hillegas Scale. The value assigned to each of the other compositions, values 0 to 8.0, is in each case the median rating of 139 judges who employed as the basis of their ratings the Hillegas Scale for English Composition by Young People.

The unit of quality is the median deviation from the median judgment of the group of 202 judges used by Dr. Hillegas in securing the final values of the compositions appearing on the Hillegas Scale. In less technical terms, the unit of quality is such a difference in quality as was recognized by exactly 75 per cent of the original judges and not recognized by the other 25 per cent.

Teachers who use the English composition scale will find themselves becoming more critical of the adequacy of the thought expressed in the compositions written by children, and possibly somewhat less concerned about the formal side of the work. It is not meant to suggest, of course, that paragraphing, punctuation, and the like are not important. Rather one would seek to emphasize the matter of sentence structure, the organization of ideas, and the style employed by the pupil.

Tests in spelling. — In order to test a pupil's ability in spelling it is necessary not simply to find out how many words in a given list he can spell, but also to have these words arranged in the order of their difficulty. A most commonly used scale is that prepared by Dr. Ayres of the Russell Sage Foundation, in which he arranges the words in the order of their difficulty and indicates the standard which one might expect to have the children of each grade reach. The words listed in this scale have the very great advantage of being the thousand words most commonly used in different sorts of English writing as chosen from four very extensive vocabulary studies. There will be a real virtue, therefore, not only in testing children by using the words on this scale, but also in having them master every one of them.¹

¹ Ayres, L. P., *A Measuring Scale for Ability in Spelling*, Russell Sage Foundation, N. Y.

Measures in algebra. — In the field of high school work scales or tests have been derived. The most widely used of these have been the scales in algebra. A part of the scale derived by Dr. Henry G. Hotz is given below.¹

FIRST YEAR ALGEBRA SCALES

HENRY G. HOTZ

Write your name here. Age.
When did you begin to study algebra? Month. Year

Solve the following equations and formulae :

1. $2x = 4$

2. $3x + 3 = 9$

3. $7m = 3m + 12$

4. $5a + 5 = 61 - 3a$

5. $10 - 11z = 4 - 8z$

6. $7n - 12 - 3n + 4 = 0$

7. $c - 2(3 - 4c) = 12$

8. $\frac{2}{3}z = 6$

9. The area of a triangle $= \frac{1}{2}bh$

The length of the base $= b$

Height of the triangle $= h$

How many square feet are there in a triangle whose base is 10 feet, and whose height is 8 feet?

10. $\frac{1}{2}x + \frac{1}{4}x = 3$

11. $\frac{2x}{3} = \frac{5}{8}$

12. $\frac{1}{4}(x + 5) = 5$

13. $\frac{y}{3} = \frac{5}{2} - \frac{y}{4}$

¹ First Year Algebra Scales, by Dr. Henry G. Hotz, published by the Bureau of Publications, Teachers College, Columbia University, New York. A second scale is the Rugg & Clark Standardized Test in First-Year Algebra, University of Chicago, Chicago, Ill.

It will be observed that the algebra scale is arranged on the same basis as the Woody arithmetic scale. Its purpose is to discover, both for the teacher and the pupil, the difficulties which the pupils have had and the place where emphasis needs to be laid in further work in the subject.

Scales in modern languages. — Scales in languages, which test the pupil's knowledge of vocabulary and his ability to translate from one language into another, have been developed in Latin and in French.¹

It is entirely possible to develop tests in other fields, and a beginning has been made in geometry, history, and in other high school subjects. Doubtless in time these scales will become developed to the point which will make them quite as valuable as the tests which have been used in the elementary school.

Measuring intelligence. — In addition to the scales which have been developed for particular subjects, psychologists have developed methods for testing general intelligence. In order to select men for different types of service in the army, these general intelligence tests were very widely given. A part of one of these tests is given below.²

TEST 8 FROM UNITED STATES ARMY TEST ALPHA

Notice the sample sentence:

People **hear** with the eyes ears nose mouth

The correct word is **ears**, because it makes the truest sentence.

In each of the sentences below you have four choices for the last

¹ Henmon's Latin Tests. V. A. C. Henmon, University of Wisconsin, Madison, Wis. Starch's French Vocabulary and Reading Tests. Daniel Starch, University of Wisconsin, Madison, Wis.

² One of eight tests included in Test Alpha, published by the Surgeon General of the United States Army.

word. Only one of them is correct. In each sentence draw a line under the one of these four words which makes the truest sentence. If you can not be sure, guess. The two samples are already marked as they should be.

SAMPLES { People hear with the eyes ears nose mouth
France is in Europe Asia Africa Australia

- 1 America was discovered by Drake Hudson Columbus Cabot 1
- 2 Pinochle is played with rackets cards pins dice 2
- 3 The Guernsey is a kind of horse goat sheep cow 3
- 4 The most prominent industry of Detroit is automobiles
brewing flour packing 4
- 5 Emeralds are usually red blue green yellow 5
- 6 The Wyandotte is a kind of horse fowl cattle granite . . 6
- 7 Bud Fisher is famous as an actor author baseball player
comic artist 7
- 8 Food products are made by Smith & Wesson Swift & Co.
W. L. Douglas Babbit Co. 8
- 9 Marguerite Clark is known as a suffragist singer movie
actress writer 9
- 10 "Hasn't scratched yet" is used in advertising a duster
flour brush cleanser 10
- 11 Maize is a kind of corn hay oats rice 11
- 12 Salsify is a kind of snake fish lizard vegetable 12
- 13 The U. S. School for Army Officers is at Annapolis
West Point New Haven Ithaca 13
- 14 Bombay is a city in China Egypt India Japan 14
- 15 Coral is obtained from mines elephants oysters reefs . . 15
- 16 Whistler is famous as a poet painter composer sculptor . 16
- 17 The tuna is a kind of fish bird reptile insect 17
- 18 The pancreas is in the abdomen head shoulder neck . . 18
- 19 Pebeco is a patent medicine disinfectant food product
tooth paste 19
- 20 The U. S. S. Kansas is a monitor destroyer battleship
submarine 20
- 21 The scimitar is a kind of musket cannon pistol sword . . 21

22	The dictaphone is a kind of typewriter multigraph phonograph adding machine	22
23	Mauve is the name of a drink color fabric food	23
24	The bassoon is used in music stenography bookbinding lithography	24
25	Cheviot is the name of a fabric drink dance food	25
26	The author of "The Raven" is Stevenson Kipling Hawthorne Poe	26
27	Velvet Joe appears in advertisements of tooth powder dry goods tobacco soap	27
28	The Knight engine is used in the Packard Lozier Stearns Pierce Arrow	28
29	Turpentine comes from petroleum ore hides trees	29
30	Isaac Pitman was most famous in physics shorthand rail-roading electricity	30
31	Scrooge appears in Vanity Fair The Christmas Carol Romola Henry IV	31
32	The number of a Zulu's legs is two four six eight	32
33	Larceny is a term used in medicine theology law pedagogy	33
34	The stanchion is used in fishing hunting farming athletics	34
35	Spare is a term used in bowling football tennis hockey	35
36	The Battle of Gettysburg was fought in 1863 1813 1778 1812	36
37	The ampere is used in measuring wind power electricity water power rainfall	37
38	The Overland car is made in Buffalo Detroit Flint Toledo	38
39	Feldspar is a vegetable mineral gas liquid	39
40	A six-sided figure is called a scolium parallelogram hexagon trapezium	40

The use of standard tests. — Tests similar to these in purpose are prepared so that they can be given to children even before they are able to read. Where expert service is available for the administration of such tests, it is possible to discover the relative intellectual ability of children, and to provide for their classification or for the work to be given them to do upon the basis of their probable achievement.

It will be discovered, for example, when such tests are employed with a group of children eight years of age, that some of them will be found to rank best with children five or six years of age; some of them will show an ability which classifies them as belonging intellectually to the same group in which they are found on the basis of their chronological age; others will be found to be very superior, sometimes as much as two or three years ahead of the group

TABLE XXIV

TEST RESULTS IN MULTIPLICATION AND SPELLING IN A GRADE CLASS

PUPIL NUMBER	ARITHMETIC TEST COURTIS MULTIPLICA- TION	SPELLING TEST	PUPIL NUMBER	ARITHMETIC TEST COURTIS MULTIPLICA- TION	SPELLING TEST
1	6	9	18	10	9
2	7	10	19	7	4
3	0	2	20	6	9
4	7	6	21	10	4
5	8	13	22	5	9
6	8	8	23	11	10
7	6	10	24	6	15
8	7	7	25	6	13
9	6	3	26	8	6
10	9	2	27	9	11
11	5	14	28	5	8
12	8	8	29	2	4
13	5	7	30	6	8
14	6	11	31	6	8
15	3	8	32	10	7
16	8	4	33	4	12
17	4	16			

in which they belong by age. That is, one of these eight-year-olds may actually be found to have the intellectual maturity of the average ten- or eleven-year-old boy or girl. There will be a very great advantage in larger schools in the giving of such tests and the organization of classes of the same grade upon the basis of the intelligence of the pupils so classified. After a test has been given in a class, the results are recorded in terms of the mark assigned to each pupil. In a certain class composed of thirty-three pupils, the Courtis tests in multiplication and a test in spelling were given. Indicating in each case the pupil by the numbers 1 to 33, results as in Table XXIV were secured.

TABLE XXV

TWO FREQUENCY TABLES

NUMBER OF ARITHMETIC PROBLEMS SOLVED CORRECTLY	NUMBER OF PUPILS RECEIVING THIS SCORE	NUMBER OF WORDS SPELLED CORRECTLY	NUMBER OF PUPILS RECEIVING THIS SCORE
0	1	2	2
1	0	3	1
2	1	4	4
3	1	5	0
4	2	6	2
5	4	7	3
6	9	8	6
7	4	9	4
8	5	10	3
9	2	11	2
10	3	12	1
11	1	13	2
		14	1
		15	1
		16	1

The distribution of scores. — There is an advantage in collecting these several scores in such a way as to show how many pupils are recorded on each of the several levels of achievement. Taking Table XXIV, a new table can be made which will show how many pupils received a zero score in arithmetic, how many were able to solve one problem, two problems, three problems, and so on, to the highest score, which was eleven problems; and in like manner, for the spelling test, it will be discovered that there were two pupils who got a score of two, and that the range is from that up to sixteen words spelled correctly. Tables of this sort are called tables of frequency. Table XXV is taken from the scores given to the 33 pupils above.

The value in arranging the scores received after the fashion of the table given is that one's attention is immediately called to the fact that half of the pupils failed below seven on the number of problems done correctly, and that in the case of spelling half of them failed below nine words spelled correctly. The extreme cases call for investigation. It may be that those at the very lowest place on the scale have been neglected, or that they have been absent from school, or that some other factor has interfered which demands simply that attention be given to them; or, on the other hand, it may be that a similar measurement in other fields, indicating a failure to do the work of a grade in any particular, would establish the desirability of having a particular pupil placed in a special class, or, in some cases, put in a lower grade. For the pupils who received the very highest score, the question of the desirability of continuing them in the regular work of the class may be raised. It is just possible that they

might use their time to better advantage, or that their superior work is an indication of the desirability of placing them in a higher grade.

The average and the median. — If one takes the trouble to add up the scores received in arithmetic by the class whose achievement we have been studying, he will find that they total 214 problems solved correctly. Since there were 33 pupils in the class, the average performance of the class, found by dividing 214 by 33, was 6.5 problems solved correctly. It will often be found more satisfactory to speak of a performance of a class in terms of the median instead of the average. By the median is meant that point on the scale above which and below which equal numbers of pupils have been placed in respect to their achievement as measured by that scale. Where there are thirty-five, thirty-seven, or any other odd number of pupils in a class one may arrange all the results of any scale measurement of this group in numerical order and from this array select the middle paper or result and designate that as the median case of the group. In such an instance half of the class will have done better than the pupil whose paper was designated as the median case, while half of the class will have done work inferior to that of the median case. It is obvious where the class is comprised of an even number of pupils that the work of no pupil can be singled out as a median case. It is quite possible, however, to think in terms of a point which divides the class so that half of the class is above and half of the class below this point. If there were twenty pupils in a class the median point would be that point on the scale located at the end of the achievement of the tenth pupil. As an element of injustice is

involved if comparisons are made between classes where both the elements, the median case and the median point, are involved, it has become customary to make comparisons on the basis of median points only whenever the achievements of pupils are being measured. The median point in the case of a class of thirty-five pupils would be that point which comes at the end of seventeen and one half cases. The median point is always located by dividing the total number of cases into two equal parts and by ascertaining where on the scale that point of division is located.

The distribution of the pupils of Table XXV on the basis of the arithmetic problems correctly solved was as follows:

Number of arithmetic problems solved cor- rectly	0	1	2	3	4	5	6	7	8	9	10	11
Number of pupils . .	1	0	1	1	2	4	9	4	5	2	3	1

The calculation of the median. — The median is found by taking half of the number of cases, which is one half of 33, or $16\frac{1}{2}$, and by counting from the pupil whose score was 0 through the distribution until $16\frac{1}{2}$ cases are reached. It will be found that in order to get $16\frac{1}{2}$ cases we have to take all of the pupils who scored on 0, 2, 3, 4, 5, and $7\frac{1}{2}$ of the pupils who were scored at 6. Our median point is, then, $\frac{7\frac{1}{2}}{9}$ of one more than the score 6. This can be understood if one remembers that any pupil who is scored on 6 must have completely solved six problems and may have done work on the seventh problem anywhere from just beginning it to the point of just failing to complete it. The

pupils who scored on 6 are, therefore, pupils who vary in their achievement from six problems done correctly up to seven problems done correctly. Since we had to take $7\frac{1}{2}$ out of 9 of the pupils scoring on 6 to get half of the whole number of pupils, we are justified in saying that we will add $\frac{7\frac{1}{2}}{9}$ of this step, which is one problem, to six in getting the median achievement of the pupils in this class. $\frac{7\frac{1}{2}}{9}$ is approximately .8. The median achievement of this class is therefore 6.8.

The advantage of the median over the average is, as has been suggested, in the definiteness with which we can speak of this central tendency. We know, when we say median, that half of the pupils did work which was poorer than this mark and that half of them did better work. It is possible in exactly the same manner to indicate the point below which 25 per cent of the pupils score and above which 75 per cent of them score. In this particular example, these percentile points are 5.8 for the 25 percentile and 8.5 for the 75 percentile. It is convenient to speak of the group falling between these percentiles as the middle 50 per cent. One describes the performance of this class by saying that the middle 50 per cent falls between 5.8 and 8.5.

An error may creep into the calculation of the median if the length of each step on the scale and the beginning point of each step are not clearly defined. It is obvious where a frequency table presents problems correctly solved in arithmetic that the steps on the distribution have the ranges indicated in Table XXVI.

TABLE XXVI

A FREQUENCY TABLE SHOWING THE RANGE OF STEP AND THE LENGTH OF STEP FOR EACH STEP ON THE DISTRIBUTION

ARITHMETIC PROBLEMS CORRECTLY SOLVED	RANGE OF EACH STEP	LENGTH OF STEP	NUMBER OF CHILDREN SOLVING THE PROBLEMS CORRECTLY
Step 0	From 0 up to and including .99 ⁺	1 unit	2
Step 1	From 1 up to and including 1.99 ⁺	1 unit	1
Step 2	From 2 up to and including 2.99 ⁺	1 unit	3
Step 3	From 3 up to and including 3.99 ⁺	1 unit	4
Step 4	From 4 up to and including 4.99 ⁺	1 unit	6
Step 5	From 5 up to and including 5.99 ⁺	1 unit	8
Step 6	From 6 up to and including 6.99 ⁺	1 unit	5
Step 7	From 7 up to and including 7.99 ⁺	1 unit	3
Step 8	From 8 up to and including 8.99 ⁺	1 unit	2

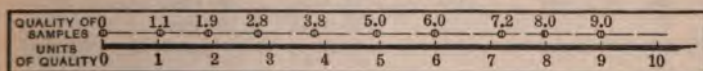
In this table each step is of equal length. The name of the step in each instance is the beginning point of the step. The scale is considered to be continuous so that step 2, for example, continues up through 2.99⁺ to that point where step 3 begins. The six children who have solved four problems correctly may be considered as being located at any points on step 4, or, in other words, at any points on the range of that step, *i.e.*, from 4 to 4.99⁺. For purposes of calculation the cases which fall on any step are considered as being distributed at equal intervals over that step. In Table XXVI thirty-four children are involved. The median point falls at the end of the seventeenth case. The first sixteen cases extend to the end of step 4, or to the point 4.99999⁺. The seventeenth case is one of eight distributed evenly on step 5. The median point is then

reached by adding to 4.99999^+ one eighth of the one unit which comprises step 5. One eighth of one unit is .125. The median point is 5.12499^+ , or, for all practical purposes, 5.13.

A second calculation of the median. — In the case of handwriting scales, English composition scales, drawing scales, and any other scales which involve a direct comparison on the part of the teacher between the child's product and the samples on the scale, it happens that the name given to each step on the scale is the middle point of that step and not the beginning of the step as it was in Table XXVI. If a teacher were comparing the English composition of a pupil with the samples on the Nassau County Supplement to the Hillegas Scale as shown on page 175, he should bear in mind that each sample as given is located at just one point on the scale, although it gives its name to a complete step. The lengths of each step with the name of the step attached appear in Figure III.

FIGURE III

A Diagrammatic Representation of the Nassau County Supplement to the Hillegas Scale in measuring English compositions.



It is clear that the steps in this scale are not equal in length. The name of the step is, however, always the middle point of the step. In rating a composition, it is placed on one of the steps because it has a value considered to be nearer the middle point of that step than the middle point of any other step. If ten or any other number of compositions were placed on one step, it is the practice to consider

them for purposes of computation as distributed at equal intervals along that step. By reference to Table XXVII it will be seen that although step D bears the name of the value 2.8, it has a range which begins with 2.37 and continues through 3.32. Every composition which is being measured and which falls within this range is given the rating of 2.8. In like manner every composition which is being compared with the scale samples and which falls within the range 6.62 and 7.61 is given the rating 7.2. This procedure simplifies the distribution and permits of more rapid calculation of the median.

TABLE XXVII

A FREQUENCY TABLE SHOWING THE RESULTS OF MEASUREMENT OF THE COMPOSITIONS OF FORTY MEMBERS OF A 6TH GRADE WITH THE USE OF THE NASSAU COUNTY SUPPLEMENT TO THE HILLEGAS SCALE

STEP	SAMPLE	ACTUAL VALUE	RANGE OF STEP	LENGTH OF STEP	NUMBER OF COMPOSITIONS PLACED ON EACH STEP
A	0	0	0- .53	.53 unit	
B	1.1	1.06	.54-1.49	.96 unit	
C	1.9	1.93	1.50-2.36	.87 unit	4
D	2.8	2.81	2.37-3.32	.96 unit	13
E	3.8	3.84	3.33-4.40	1.08 units	18
F	5.0	4.97	4.41-5.48	1.08 units	4
G	6.0	6.01	5.49-6.61	1.13 units	1
H	7.2	7.22	6.62-7.61	1.00 units	
I	8.0	8.00	7.62-8.50	.89 unit	
J	9.0	9.0	8.51-		
Total number of compositions					40

These figures are reproduced from a Teachers College Bulletin, entitled Supplementing the Hillegas Scale, by M. R. Trabue.

Rating compositions. — The best result will probably be obtained by having each composition rated several times, and if possible, by a number of different judges who have trained themselves in the use of the scale, the paper being given each time that value on the scale to which it seems nearest in quality. The final mark for each paper should be the median score or step (not the median point or the average point) of all the scores assigned by the different judges. For example, if a paper is rated three times, once as in step D (Value 2.8), and twice as in step E (Value 3.8), it should be given a final mark indicating that it is a step E or 3.8 paper.

In the last column of Table XXVII is given the final distribution of forty compositions of a sixth grade class after the final rating on each composition was obtained in this manner. The median point of the distribution is at the end of the twentieth case. The first seventeen cases bring the class through step D or to the point 3.32, which is the end of that step. Three more cases are required before the median point is reached. These three cases are the first three of the eighteen cases located on step E. The length of step E is 1.08 units. $\frac{3}{18}$ of 1.08 are .18. By adding .18 to 3.32 the end of step D, we find the median point in this distribution to be 3.50.

Rating handwriting. — Table XXVIII presents a frequency table involving the results obtained from the measurement of the handwriting of the seventh grade of a school system.

In scoring the papers in handwriting listed in Table XXVIII, the judgments of each of three judges were first obtained. Each of these judges scored each paper with-

TABLE XXVIII

DISTRIBUTION OF THE HANDWRITING SCORES OF 213 PUPILS IN THE 7TH GRADE OF A SCHOOL SYSTEM. THE THORNDIKE HANDWRITING SCALE WAS USED IN THE DETERMINATION OF THE SCORES.

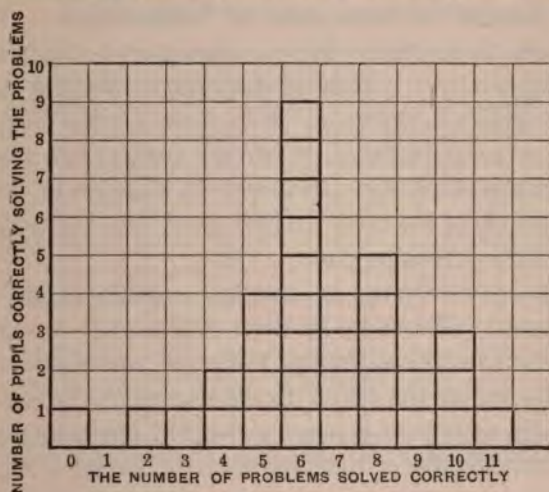
THE RANGE OF STEP AND LENGTH OF STEP ARE GIVEN FOR EACH STEP ON THE SCALE.

STEP	RANGE OF STEP	LENGTH OF STEP	NUMBER OF PAPERS PLACED ON EACH STEP
0	From 0 up to and including .499 ⁺	.499 ⁺ unit	
1	From .50 up to and including 1.49 ⁺	1. unit	
2	From 1.50 up to and including 2.49 ⁺	1. unit	
3	From 2.50 up to and including 3.49 ⁺	1. unit	
4	From 3.50 up to and including 4.49 ⁺	1. unit	
5	From 4.50 up to and including 5.49 ⁺	1. unit	
6	From 5.50 up to and including 6.49 ⁺	1. unit	
7	From 6.50 up to and including 7.49 ⁺	1. unit	4
8	From 7.50 up to and including 8.49 ⁺	1. unit	26
9	From 8.50 up to and including 9.49 ⁺	1. unit	55
10	From 9.50 up to and including 10.49 ⁺	1. unit	60
11	From 10.50 up to and including 11.49 ⁺	1. unit	41
12	From 11.50 up to and including 12.49 ⁺	1. unit	21
13	From 12.50 up to and including 13.49 ⁺	1. unit	5
14	From 13.50 up to and including 14.49 ⁺	1. unit	1
15	From 14.50 up to and including 15.49 ⁺	1. unit	
16	From 15.50 up to and including 16.49 ⁺	1. unit	
17	From 16.50 up to and including 17.49 ⁺	1. unit	
18	From 17.50 up to and including 18.49 ⁺	1. unit	
Total number of papers			213

out knowing the judgments of the other two judges. The median judgment for each paper was considered the final rating on that paper. The distribution of Table XXVIII

FIGURE IV

A block diagram showing scores in the Courtis multiplication test.



was made on the basis of these median judgments. The median point for the distribution of 213 cases is that point on the scale which is reached after $106\frac{1}{2}$ cases have been counted. The first eighty-five cases include 4 on step 7, 26 on step 8, and 55 on step 9. The last point reached by these first eighty-five cases is 9.499^+ , which is the end of step 9. Twenty-one and one half more cases must be counted before the median point is reached. The sixty cases located on step 10 are considered as distributed at equal intervals on that step. The point which is $\frac{21\frac{1}{2}}{60}$ of the distance on step 10 is the median point of the entire distribution. Step 10 is one unit in length. $\frac{21\frac{1}{2}}{60}$ of 1 unit is .358. Adding .358 to 9.499^+ , which is the end of step 9, the median point of

9.857 is determined. For all practical purposes this median point is 9.9.

The graphic representation of achievement. — It will help often to represent the performance of children in a class graphically. A form of diagram, sometimes called a block diagram, is drawn so as to show on the horizontal axis the system of scoring, and on the vertical axis the number of pupils receiving each score. A diagram of this sort for the pupils of the class that we have been discussing appears on the preceding page.

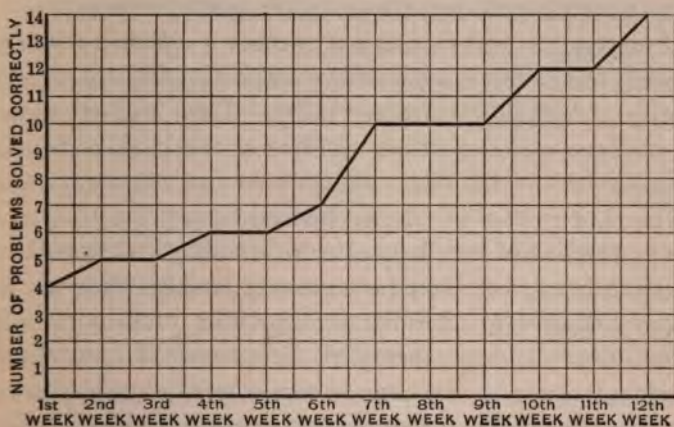
Pupils are interested in drawing a graph of their own performance. This may be done conveniently by indicating on one axis the score that the pupil receives in successive tests, and on the other, the date at which the tests were given. In each case a point is located between the axes which corresponds in the first case to the score received, and in the second case to the date upon which the test was given.

An example of the data available from which such a diagram may be derived is as follows:

		NUMBER OF PROBLEMS SOLVED CORRECTLY
1st week	. . . . .	4
2d week	. . . . .	5
3d week	. . . . .	5
4th week	. . . . .	6
5th week	. . . . .	6
6th week	. . . . .	7
7th week	. . . . .	10
8th week	. . . . .	10
9th week	. . . . .	10
10th week	. . . . .	12
11th week	. . . . .	12
12th week	. . . . .	14

FIGURE V

A line graph showing the progress of a pupil over a period of twelve weeks in solving correctly Courtis' problems in addition.



Comparisons in achievement. — Teachers will often find it interesting to compare the scores which they have recorded of the achievements of pupils in their classes with similar records of achievement in other classes of like grade in the same school system. In the offices of some supervisors and superintendents these tables and graphs may be exhibited for teachers who are interested in comparing their work with that done by others.

There should never be any suggestion in this work of measuring the achievements of children that it is expected that all children in any grade can, by any process of training, be made equal in achievement. The more training that is given to all of them the more they will differ. If a certain standard of achievement is set for the grade, special attention will have to be given to those who

show the small achievement in the initial tests. Certain it is that those who show unusual achievement can to advantage be given other work to do when they have surpassed the standard established for a given grade or group.

Progress the real measure of success. — Within a school system the children in the same school grade cannot uniformly accomplish the same results. There will be classes of children, and sometimes sections of the city, in which, because of the handicap in environment or on account of the lower level of intelligence commonly found among those who live in less fortunate surroundings, the achievement to be expected must of necessity be less than can be easily attained by children living under more fortunate conditions. The measuring of the success of a teacher's work can never be made in a comparison of the work done by pupils in his class with the achievement of pupils in another class. The real measure of success is in the progress that has been made from the time a given group of pupils has entered a grade until the time that the test is given. It cannot be too often emphasized that the measurement is not in itself worth while except as it discovers to teachers the particular difficulties confronting the children and makes clear the need for special help or for relief from the ordinary work of the class for pupils at the lower and upper ends of the distribution.

In any field the development of units of measurement is dependent upon careful investigation and upon a realization of the imperfection of the units already used. It is only as we insist upon measurement that we can hope to have our units refined. Take, for example, the problem of grades or marks which are commonly assigned to stu-

dents as a measure of their efficiency in doing school work. All investigation of these units has shown that there is a very great difference in their application by different members of the same teaching corps. The way to bring about a remedy is not to abolish all marks or ratings, but rather to study the problem of the proper distribution of marks, and, if necessary, to weight differently the marks of different instructors. The more imperfect the unit of measure which we now apply, the greater the necessity for insisting upon measurement.

The first step in the development of scientific inquiry in any field is found in accurate description of the phenomena involved. Investigators in education have already taken the further steps in scientific inquiry which have enabled them to foretell with considerable accuracy the results which might be expected in education under given conditions. Further progress is, however, dependent upon that sort of measurement which will discover problems which are not now clearly defined or which have not yet been thought of. Of course, as inferences are made in the light of the problem suggested, there will be still further necessity for accurate measurement. When those who are charged with the responsibility of determining educational policies appeal to fact rather than to opinion, when we are able to evaluate accurately that which we achieve, educational progress will be assured and a profession of education will have been established.

QUESTIONS

1. If you have used any of the tests or scales listed below, compare your results with the grade standards shown here.

GRADE STANDARDS IN CLASSROOM ACHIEVEMENTS AS
MEASURED BY STANDARD TESTS AND SCALES

	SCALE OR TEST	GRADE						
		II	III	IV	V	VI	VII	VIII
Reading	Thorndike Reading Alpha 2			5.25	5.75	6.50	7.0	7.50
	Thorndike Handwriting	8.0	9.0	10.0	11.0	11.8	12.5	13.0
Handwriting	Ayres Handwriting	35.0	39.3	45.6	50.1	56.6	62.3	65.8
	Freeman Handwriting	17.9	18.4	19.0	20.0	20.8	22.0	23.0
	Rate in letters per minute	30.6	43.8	51.2	59.1	62.8	67.9	73.0
Language and Composition	Nassau Co. Ex. to Hillegas Scale			3.5	4.0	4.5	5.0	5.5
	Trabue Language Scale B, C, D, or, E	4.8	8.0	10.0	11.4	12.4	13.4	14.4
	Courtis Addition, Series B			1.9	3.9	4.4	4.7	5.6
	Courtis Subtraction, Series B			1.2	4.5	6.1	7.8	8.4
	Courtis Multiplication, Series B			1.3	2.6	4.5	5.2	6.4
	Courtis Division, Series B			.7	2.3	4.3	5.8	6.3
Arithmetic	Woody Addition, Series A or B	3.12	4.99	6.11	6.99	7.95	8.65	9.01
	Woody Subtraction, Series A or B	1.44	2.66	4.22	5.47	6.46	7.31	7.64
	Woody Multiplication, Series A or B		1.89	4.05	5.53	6.72	7.26	7.93
	Woody Division, Series A or B		2.54	3.21	4.94	5.87	6.59	7.16
	Stone Reasoning				4.0	7.0	9.0	10.0

2. How would you establish the fact of individual differences in achievement among the children in a given class? What reorganization of classes ought to be made in the light of our knowledge of individual differences?

3. Explain what use you would make of the results of a reading test applied to a grade class.

4. Discuss the relative merits of the average and the median as single measures of the achievement of a class.

5. Calculate the median point of the following results of a spelling test:

No. of words spelled correctly . . . 7 — 8 — 9 — 10 — 11 — 12
No. of pupils spelling words correctly 0 — 5 — 7 — 10 — 12 — 6

6. Calculate the median point in this distribution of handwriting scores —

DISTRIBUTION OF HANDWRITING SCORES, THORNDIKE HAND-
WRITING SCALE

STEP	NUMBER OF PAPERS SCORED ON EACH STEP
6	3
7	4
8	7
9	9
10	8
11	1
12	1

7. What is the median point in this distribution of English scores?

DISTRIBUTION OF SCORES OF ENGLISH COMPOSITIONS MEASURED
BY NASSAU COUNTY SUPPLEMENT TO THE HILLEGAS SCALE

STEPS ON SCALE	NUMBER OF PAPERS ON EACH STEP	CUMULATIVE FREQUENCY
0		0
1.1	IIII	4
1.9	III	3
2.8	II	2
3.8	IIII II	7
5.0	IIII IIIII II	12
6.0	IIII IIIII III	13
7.2	III	3
8.0		0
9.0		0
Total number of cases		44
Median score		

8. In the evaluation of each of twelve compositions, the scores as allotted by three separate judges, A, B, and C, are as recorded below. What is the final median score on each of these compositions which you would utilize in making a distribution?

SUMMARY OF RATINGS ON ENGLISH COMPOSITION

COMPOSITION CODE NUMBERS	SCORER'S INITIAL			MEDIAN SCORE
	A	B	C	
60401	1.1	1.9	1.1	
02	5.0	6.0	3.8	
03	1.9	1.9	1.9	
04	3.8	2.8	3.8	
05	5.0	2.8	3.8	
06	3.8	5.0	5.0	
07	5.0	5.0	5.0	
08	5.0	5.0	6.0	
09	5.0	6.0	6.0	
10	6.0	7.2	6.0	
11	6.0	6.0	6.0	
12	3.8	5.0	5.0	

9. Determine the twenty-five percentile and the seventy-five percentile of the distribution of English composition papers as given in Question 7. What is meant by the "middle fifty per cent" of a distribution? Of what significance is such a measure to you as a teacher?

10. Using cross-section paper, make graphs of the principal distributions of this chapter. What does a teacher gain by presenting graphically the achievement facts of a class group?

11. Review critically the graphic representations of pupil achievements as presented in school surveys.

12. In the measurement of the handwriting of a class it is advantageous to present the results as shown below. Calculate the average speed, the median quality, and the median speed of the handwriting of this group of 25 children.

SUMMARY OF RATINGS ON FORMAL HANDWRITING						DISTRIBUTION OF SCORES													
Pupils' Code Nos.	Scorers			Median Score	Speed	No. of Letters per min.	Quality of Handwriting											Total	
	E	F	R				4	5	6	7	8	9	10	11	12	13			
1	5	6	7	6	41														
2	4	5	5	5	63	0-5													
3	7	8	7	7	35														
4	6	6	6	6	50	6-10													
5	10	9	10	10	35														
6	10	10	11	10	44	11-15													
7	8	11	9	9	36														
8	6	8	7	7	54	16-20													
9	6	4	5	5	66														
10	9	8	10	9	40	21-25							1					1	
11	6	7	6	6	38														
12	10	10	10	10	25	26-30											1	1	
13	14	12	13	13	28														
14	7	8	7	7	46	31-35				1			2	2				5	
15	9	9	9	9	39														
16	12	10	11	11	32	36-40	1		1			3						5	
17	11	11	11	11	41														
18	8	11	9	9	41	41-45			1			2	1	1				5	
19	6	7	8	7	57														
20	5	6	7	6	72	46-50			1	2								3	
21	6	9	7	7	46														
22	8	10	10	10	33	51-55				1								1	
23	4	5	4	4	37														
24	9	9	9	9	45	56-60				1								1	
25	10	11	11	11	35	61-65		1										1	
Average.						Total	1	1	3	5	0	5	4	3	0	1			

13. Determine the relative position of each grade of the following table on Scale "C" of the Trabue Completion Tests. A step on this scale has a range as follows: Step 7 runs from 7 to 7.99⁺.

GRADE DISTRIBUTION OF SCORES IN A TRABUE COMPLETION TEST
SCALE "C"

GRADE	SCORES																				TOTAL IN CLASS	MEDIAN SCORE
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
2		1	2	2	2	3	2	2													14	
3						2		4	4	2	2		1								15	
4								1	2	5	2	3									13	
5							1			2	3	5	1	1			1				14	
6								1		2	3	1	1	3	1	1					13	
7												2	3			1	2				8	
8											1	1		3	1			1			7	
9												1				2	1	1			6	

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1. Bonser's Reasoning Tests. Bureau of Publications, Teachers College, Columbia University.
2. Buckingham's Reasoning Tests. Fifteenth Year Book, National Society for the Study of Education, Part I, 1916.
3. Curtis Reasoning Tests. S. A. Curtis, 82 Eliot Street, Detroit, Mich.

4. Starch's Arithmetical Scale A. Daniel Starch, University of Wisconsin, Madison, Wis.
6. 5. Stone's Reasoning Test. Bureau of Publications, Teachers College, Columbia University.

III. DRAWING

1. Thorndike's Drawing Scale, Bureau of Publications, Teachers College, Columbia University.

IV. GEOGRAPHY

1. Boston Tests. Bull. No. 5, School Document No. 14, 1915, Department of Educational Investigation and Measurement, Boston.
2. Buckingham's Geography Test. B. R. Buckingham, State Department of Public Instruction, Madison, Wis.
3. Hahn-Lackey Geography Scale. H. H. Hahn, Wayne State Normal School, Wayne, Neb.
4. Starch's Geography Tests, Series A. Daniel Starch, University of Wisconsin, Madison, Wis.
5. Thompson's Standardized Tests in Geography. T. E. Thompson, Monrovia, Cal.
6. Witham's Standard Geography Tests. E. C. Witham, Southington, Conn.

V. HANDWRITING

1. Ayres's Scale for Measuring the Handwriting of School Children. Russell Sage Foundation, 130 East 22d Street, New York.
2. Ayres's Scale for Measuring the Quality of Handwriting of Adults. Russell Sage Foundation, 130 East 22d Street, New York.
3. Ayres's "Gettysburg Edition." Russell Sage Foundation, 130 East 22d Street, New York.
4. Breed and Downs's Scale. Elementary School Journal, March, 1917.
5. Curtis Standard Research Tests, Handwriting, Series W. S. A. Curtis, 82 Eliot Street, Detroit, Mich.
6. Freeman's Handwriting Scale. Houghton Mifflin Company.

7. Gray's Score Card. C. T. Gray, University of Texas, Austin, Texas.
8. Johnson and Stone's Scale. Elementary School Journal, February, 1916.
9. Starch, Handwriting Scale. Daniel Starch, University of Wisconsin, Madison, Wis.
10. Thorndike's Scale. Bureau of Publications, Teachers College, Columbia University.
11. Zaner and Bloser Handwriting Scales. Zaner and Bloser Company, Columbus, Ohio.

VI. HISTORY

1. Buckingham's Tests. B. R. Buckingham, c/o State Department of Public Instruction, Madison, Wis.
2. Bell and McCollum Test. Journal of Educational Psychology, May, 1917.
3. Harlan's Test of Information in American History. Charles L. Harlan, College of Education, University of Minnesota, Minneapolis, Minn.
4. Starch's American History Tests, Series A. Daniel Starch, University of Wisconsin, Madison, Wis.

VII. LANGUAGE

1. Breed and Frostic Scale. Elementary School Journal, January, 1917.
2. Curtis Standard Tests in English. S. A. Curtis, 82 Eliot Street, Detroit, Mich.
3. Harvard-Newton Composition Scale. Harvard University Press, Cambridge, Mass.
4. Hillegas Scale for the Measurement of the Quality in English Composition of Young People. Bureau of Publications, Teachers College, Columbia University.
5. Nassau County Supplement. Bureau of Publications, Teachers College, Columbia University.
6. Thorndike's Extension of the Hillegas Scale. Bureau of Publications, Teachers College, Columbia University.

7. Trabue Completion-Test Language Scale. Bureau of Publications, Teachers College, Columbia University.
8. Willing's Scale. Bureau of Measurements and Standards, Emporia, Kans.
9. Charters's Grammar Test. W. W. Charters, University of Illinois, Urbana, Ill.
10. Haggerty's Grammar Test. Bureau of Coöperative Research, University of Minnesota, Minneapolis, Minn.
11. Starch's Grammatical Scales. Journal of Educational Psychology, December, 1915.
12. Starch's Punctuation Scale. } Daniel Starch, University of
13. Starch's Grammatical Tests. } Wisconsin, Madison, Wis.
14. Thompson's Research Test in Grammar. T. E. Thompson, Monrovia, Cal.
15. Boston Copying Test. Bull. No. 6, School Document No. 2, 1916, Department of Educational Investigation and Measurement, Boston, Mass.

VIII. MUSIC

1. Seashore's Musical Talent Chart. Carl E. Seashore, University of Iowa, Iowa City, Iowa.

IX. SILENT READING

1. Brown's Silent Reading Test. Bureau of Research, 25 Capitol Street, Concord, N. H.
2. Courtis Standard Research Tests in English. S. A. Courtis, 82 Eliot Street, Detroit, Mich.
3. Courtis Research Tests in Silent Reading (Series R, Test 2). S. A. Courtis, 82 Eliot Street, Detroit, Mich.
4. Fordyce's Scale for Measuring the Achievements in Reading. The University Publishing Company, Lincoln, Neb.
5. Gray's Silent Reading Tests. William S. Gray, School of Education, University of Chicago, Chicago, Ill.
6. Haggerty's Visual Vocabulary Tests. Bureau of Coöperative Research, University of Minnesota, Minneapolis, Minn.

7. Kansas Silent Reading Tests. Bureau of Educational Measurements and Standards, Emporia, Kansas.
8. Minnesota Scale Beta. Bureau of Coöperative Research, University of Minnesota, Minneapolis, Minn.
9. Monroe's Standardized Tests in Silent Reading. Bureau of Educational Measurements and Standards, Emporia, Kansas.
10. Starch's Silent Reading Tests. Daniel Starch, University of Wisconsin, Madison, Wis.
11. Starch's English Vocabulary Tests. Daniel Starch, University of Wisconsin, Madison, Wis.
12. Thorndike's Visual Vocabulary Scales. Bureau of Publications, Teachers College, Columbia University.
13. Thorndike's Scale Alpha and Alpha 2 for Measuring the Understanding of Sentences. Bureau of Publications, Teachers College, Columbia University.

X. ORAL READING

1. Gray's Oral Reading Test. William S. Gray, School of Education, University of Chicago, Chicago, Ill.
2. Haggerty's Visual Vocabulary Tests. Bureau of Coöperative Research, University of Minnesota, Minneapolis, Minn.
3. Jones's Visual Vocabulary Tests. R. G. Jones, Assistant Superintendent of Schools, Cleveland, Ohio.
4. Price's Oral Reading Tests. Superintendent E. D. Price, Enid, Okla.

XI. SPELLING

1. Ayres's Spelling Scale. Russell Sage Foundation, 130 East 22d Street, New York.
2. Courtis Standard Research Tests in Spelling. S. A. Courtis, 82 Eliot Street, Detroit, Mich.
3. Iowa Dictation Exercise and Spelling Tests. E. J. Ashbaugh, Iowa City, Iowa.
4. Nebraska Spelling Test. Dean Charles Fordyce, Lincoln, Neb.
5. Monroe's Timed Sentence Spelling Tests. Bureau of Educational Measurements and Standards, Emporia, Kans.

6. Boston Minimum Spelling Lists. Department of Educational Investigation and Measurement, Boston, Mass.
7. Buckingham's Spelling Scale. Bureau of Publications, Teachers College, Columbia University.
8. Jones's Concrete Investigation of the Material of English Spelling. University of South Dakota, Aberdeen, So. Dak.
9. National Business Ability Tests (Spelling). Sherwin Cody, 189 West Madison Street, Chicago, Ill.
10. Rice's Spelling Test. The Forum, March-August, 1897.
11. Starch's Spelling Scales. Daniel Starch, University of Wisconsin, Madison, Wis.

STANDARDIZED TESTS FOR USE IN THE HIGH SCHOOL

I. ALGEBRA

1. Coleman's Scale for Testing Ability in Algebra. Superintendent W. H. Coleman, Bertrand, Neb.
2. Hotz's First-Year Algebra Scales. Bureau of Publications, Teachers College, Columbia University.
3. Indiana Algebra Tests. Report of Third Indiana Conf. on Measurements, Indiana University, Bloomington, Ind.
4. Monroe's Standard Research Tests in Algebra. Bureau of Educational Measurements and Standards, Kansas State Normal School, Emporia, Kans.
5. Stromquist's Preliminary Algebra Tests. University of Wyoming, Laramie, Wyo.
6. Rugg and Clark Standardized Tests in First-Year Algebra. H. O. Rugg, University of Chicago, Chicago, Ill.
7. Thorndike's Algebra Test. Bureau of Publications, Teachers College, Columbia University.

II. DRAWING

1. Rugg's Scale for Measuring Freehand Lettering for Use in Secondary Schools and Colleges. H. O. Rugg, School of Education, University of Chicago, Chicago, Ill.

III. FOREIGN LANGUAGE

1. Brown's Connected-Latin Test.
 2. Brown's Latin-Sentence Test.
 3. Brown's Formal Latin-Vocabulary Test.
 4. Brown's Functional Latin-Vocabulary Test.
 5. Brown's Formal Latin-Grammar Test.
 6. Brown's Functional Latin-Grammar Test.
- | | |
|---|---|
| } | President H. A. Brown, State Normal School, Oshkosh, Wis. |
|---|---|
7. Hanus's Latin Tests. Paul Hanus, Harvard University, Cambridge, Mass.
 8. Henmon's Latin Tests. V. A. C. Henmon, University of Wisconsin, Madison, Wis.
 9. Starch's French Vocabulary and Reading Tests.
 10. Starch's German Vocabulary and Reading Tests.
- | | |
|---|---|
| } | Daniel Starch, University of Wisconsin, Madison, Wis. |
|---|---|
11. Whipple's German Vocabulary Test. Guy M. Whipple, University of Illinois, Urbana, Ill.

IV. GEOMETRY

1. Minnick's Geometry Tests. J. H. Minnick, University of Pennsylvania, Phila., Pa.
2. Rogers's Mathematical Tests. Bureau of Publications, Teachers College, Columbia University.
3. Stockard and Bell's Geometry Test. Journal of Educational Psychology, January, 1915.

V. HISTORY

1. Sackett's Scale in Ancient History. L. W. Sackett, University of Texas, Austin, Tex.

VI. PHYSICS

1. Starch's Tests in Physics. Daniel Starch, University of Wisconsin, Madison, Wis.

CHAPTER X

THE DAILY PROGRAM AND CLASS ORGANIZATION

THE teacher's program. — In the teaching of a class group the teacher proceeds according to a plan or program. The reasons which make such a plan desirable are self-evident. The number of hours during which children are under instruction is limited. The number of school subjects in which the children are to be taught is large. The course of study as outlined by state authorities or developed by the local administrative unit has clearly defined objectives which the teacher cannot disregard. A suggestive time allotment may have been distributed among the teachers of a school or school system as a guide. Teaching without consideration of time expenditure and without conformance to any organized system leads to chaos.

In the construction of a daily program, the classroom teacher is confronted with many questions. How much time is available for all school work? How many subjects must be taught? How much time should be allowed for study in each subject? What subjects require a maximum of teacher-instruction? What is the most advantageous plan of the division of the time allotment in one subject? What percentage of the recitation hour should be devoted to teaching how to study? Has the class as a group a poor record in one subject which therefore requires more time? What standards is it desirable for the class to

reach in the various subjects? How soon may the class be expected to surpass the standards set? Will this require a program revision? The answers to these and similar questions will have direct bearing upon any class program.

A schedule established for an entire school system with stated time-allotments for the subjects in all grades has value. It at least provides the point of departure for the teacher who has learned the difficulties confronting his class group which makes it different from any other group in the same grade. The allotments as determined for a modern school system are fixed upon the assumption that certain subjects are more "difficult" than others and therefore require more time. A subject which may be difficult for one school or at a certain point in the course of study may not present the same difficulties in another school. It is well, therefore, to make elasticity one of the characteristics of such a time schedule. The teacher who finds it necessary to vary from the fixed schedule should be permitted to do so under certain conditions. Neither temporary whims nor desire for constant experimentation seem acceptable reasons for such deviations. When it has been pointed out through accurate tests that a class ranks low in arithmetic, the teacher of such a class should be permitted to readjust its time allotments, providing it is evident that there is a subject the time allotment of which may be reduced without injury to the group. Special achievement or high rank on the part of a class in one subject such as handwriting or spelling is sufficient reason for deviation from the time schedule that the class may be more rapidly advanced in another field.

Recording changes in the teaching program. — Radical changes from the official time schedule are properly made after discussion with the supervisory corps and with their consent. The daily program of the teacher as filed in the office of the superintendent of schools is the program according to which supervisors and superintendents plan their own work. When changes have been agreed upon, the teacher will keep the records of the central office up to date by sending in a new program with the changes incorporated thereon. When the duplicate copy of the teacher's program is given a conspicuous place near the door of the classroom, it answers many questions and helps supervisors, visitors, and substitute teachers in their contacts with the class group. The teacher who adheres to the announced plan of instruction when visitors and supervisors appear displays a proper professional attitude. Only when requests for program deviation have been made will a teacher at such a time depart from the program. Supervision can only be helpful when the teacher feels under no restraint when the principal, the superintendent, or supervisors appear. Sudden program shifts made on the arrival of visitors or supervisors are indications of lack of subject training or daily preparation or of an unreasonable timidity. Self-assurance is acquired through adequate preparation both in the subjects to be taught and in the purposes and ideals of the profession.

Time allotments for fifty cities. — The validity of the subject time allotments of the grades of elementary schools as well as of any changes which are contemplated from time to time may be determined by comparison with the time distribution by subjects and grades as made for

fifty cities by Professor Holmes of Harvard University. Extreme variations from the average number of minutes devoted per week to any one subject may be readily explained. The school system or school where great variations from the averages of Table XXIX are found will profit by proving the desirability of such variations.

TABLE XXIX

DISTRIBUTION OF TIME BY SUBJECTS AND BY GRADES IN FIFTY CITIES¹

MINUTES PER WEEK DEVOTED TO	GRADE							
	I	II	III	IV	V	VI	VII	VIII
Opening exercises	59	59	59	54	49	48	48	48
Reading	412	364	291	237	195	181	151	150
Language	116	122	145	164	179	182	207	220
Spelling	83	102	113	103	94	90	81	79
Penmanship	77	93	81	82	77	73	60	57
Arithmetic	93	149	203	231	223	226	217	220
Geography	25	11	77	128	157	166	151	118
History	42	48	54	88	103	110	141	181
Science	57	63	62	57	53	62	70	88
Drawing	151	84	87	82	77	77	77	76
Music	70	130	73	74	70	70	70	76
Manual training	65	73	62	70	77	88	112	115
Physical training	71	63	62	62	59	62	59	60
Recess	135	128	128	119	113	108	102	102
Miscellaneous	118	98	135	119	122	122	102	135

¹ Arranged from the original tabulation by H. W. Holmes in the Fourteenth Yearbook of the National Society of the Study of Education. Also on p. 163, Classroom Organization and Control, by J. B. Sears (Houghton Mifflin Co.).

The figures of this table are the averages for fifty cities. It is evident that the formal subjects are still allotted in our schools a relatively large amount of school time as compared with the content subjects.

"Reading, language, spelling, penmanship, and arithmetic — five subjects out of eleven in the 'recitation' group — take out 70 per cent of the time spent in strictly class work. These subjects, with history and geography, take over 82 per cent of the 'recitation' time. All the cities allot time to all these subjects except penmanship, which is 'incidental' in one schedule. No other group shows similar agreement. But the average deviations are larger in reading, language, and arithmetic than in any other subject except 'miscellaneous.' In reading, the extreme variation is noticeably large, over two thousand hours — more than two years of school life. We need standardization most in the standard subjects.

"Both music and drawing have a fuller share of educational confidence than science or manual training or physical training. Each has a larger total time allotment, a larger percentage of recitation time, and fuller agreement in assignment of time, both as to the number of cities allotting hours and as to deviation of allotments.

"In manual training and physical training, the extreme deviations and the average deviations are very large, but not so large as in reading and arithmetic. There is less agreement as to allotment for these subjects, however, than for any others except opening exercises, recess, and 'miscellaneous.'

"Recess takes more time than any subject except reading and arithmetic. This fact brings to mind a whole series of problems in the hygiene of the program and the management of organized play.

"The large deviations for 'miscellaneous' show how far we are from agreement on study hours, individual work with pupils, self-organized group work, and in general the use of free time, and hence of freedom by both teachers and pupils."¹

¹ Time Distribution by Subjects and Grades in Representative Cities, H. W. Holmes, The Fourteenth Year Book of the National Society for the Study of Education.

Since disagreement and lack of uniformity occur to the degree indicated, program-making will receive earnest consideration from all teachers. The problem involves such other elements as the amount of homework for children of varying ages, the desirable length of class periods from physiological and psychological standpoints, the need for frequent shifting of children's interests, the proper grades in which to begin various subjects, and the desirable sequence of subjects.

The scientific determination of time allotments. — The teacher is interested in discovering the most economical time period for all kinds of school work. Scientific measurement of the results achieved in a large number of class groups spending varying amounts of time in a given subject may give teachers this knowledge. In 1902 Dr. J. M. Rice, in the measurement of the ability of 6000 children in seven different school systems, found no direct relationship between the time devoted in a school to arithmetic and the results achieved by the children. He writes:

"In the first place, it is interesting to note that the amount of time devoted to arithmetic in the school that obtained the lowest average — 25 per cent — was practically the same as it was in the one where the highest average — 80 per cent — was obtained. In the former the regular time for arithmetic in all the grades was forty-five minutes a day, but some additional time was given. In the latter the time varied in the different classes, but averaged fifty-three minutes daily. This shows an extreme variation in results under the same appropriation of time.

"Looking again toward the bottom of the list, we find three schools with an average of 36 per cent. In one of these, insufficient pressure might be suggested as a reason for the unsatisfactory results, only

thirty minutes daily having been devoted to arithmetic. The second school, however, gave forty-eight, while the third seventy-five. This certainly seems to indicate that a radical defect in the quality of instruction cannot be offset by an increase in quantity.

"If we now turn our attention from the three schools just mentioned and direct it to three near the top — Schools 2, 3, and 4, City I — we find the conditions reversed; for while the two schools that gave forty-five minutes made averages of 64 per cent and 67 per cent, respectively, the school that gave only twenty-five minutes succeeded in obtaining an average of 69 per cent. This would appear to indicate that while, on the one hand, nothing is gained by an increase of time where the instruction in arithmetic is faulty, on the other hand, nothing is lost by a decrease of time, to a certain point, where the schools are on the right path in teaching the subject. Perhaps the most interesting feature of the table is the fact that the school giving twenty-five minutes a day came out within two of the top, while the school giving seventy-five minutes daily came out practically within one of the bottom."

A second investigation in the same field made by Dr. C. W. Stone in 1908 confirms Dr. Rice's findings.

"As measured by the time used in school the thirteen systems with less than the median time cost stand slightly the better; and as measured by the time including home study, the thirteen systems with more than the median time cost stand somewhat the better. The time used in school is doubtless the more exact measure, but some systems depend on home study to a considerable extent. Hence both measures are used. The correlation is practically zero without home study and not very much above zero including home study."¹

Subject sequence in the daily program. — The traditional method of determining the sequence of subjects on the daily program is on the supposed difficulty of the

¹ Stone, C. W., *Arithmetical Abilities*, pp. 58-59. Bureau of Publications, Teachers College, Columbia University.

TABLE XXX
DIVERSITY OF SEQUENCE IN CLASS PROGRAMS¹
GARY, INDIANA, 1916

SCHOOL HOURS	CLASS 4 2D GRADE	CLASS 9 4TH GRADE	CLASS 12 6TH GRADE	CLASS 15 8TH GRADE
8.15	Physical training	Academic work	Auditorium	Special work
9.15	Auditorium	Special work	Physical training	Special work
10.15	Special work	Academic work	Special work	Academic work
11.15	Academic work	Luncheon	Special work	Luncheon
12.15	Luncheon	Academic work	Luncheon	Academic work
1.15	Physical training	Special work	Academic work	Academic work
2.15	Special work	Physical training	Academic work	Physical training
3.15	Academic work	Auditorium	Academic work	Auditorium

subjects. The most difficult subjects are placed first in the morning on the theory that children do their hard work best in the morning. When no departmentalization prevails such a plan may be followed. With departmental teaching it is evident that no sacred subject sequence may be maintained in the program. Arithmetic appears during the first as well as during the last period. Physical training may come at 8.15 A.M. or at 2.15 P.M., and

¹ The Gary Public Schools, Survey of the Organization and Administration, by Strayer and Bachman. General Education Board, New York, 1919, p. 48.

handwork classes may be in operation during any hour of the day. The diversity in subject sequence as it existed in the Gary (Ind.) Schools in 1916 is illustrated in Table XXX. These four classes in as many grades show the utmost of variations.

The all-year school. — Investigations of the use made by children of the hours spent between schooltime and bedtime emphasize the need for a further control of children's time than has been the practice in most communities. The school year of twelve months and the school day of eight to ten hours as substitutes for the nine- and ten-month school year and the five-hour school day present decided advantages. The lengthened school day involves new phases of subject matter and control. It does not, however, signify an increase in the number of periods of instruction of the classroom teacher but requires more teachers to carry the burden of special work.

The number of recitations per teacher. — Teaching is an extremely fatiguing work. The teaching of children for four or five periods of thirty-five to forty minutes each is a hard day's work coupled with the necessary preparation and the secondary tasks of the teacher. When the number of recitations for the elementary teacher surpasses ten, the probabilities are that the quality of teaching is very seriously affected. The program of the rural school teacher should be planned with the purpose of effecting combinations of classes so that the number of recitations may be reduced below twenty-five. Small classes of two, three, and four pupils should be eliminated where possible even in many high schools. The device of rotating subjects assists in such elimination. Small classes lack in

competition, inspiration, and opportunity for social development.

The individual child. — The strength of a class program varies with its recognition of the needs of the individual child. The small school of four to twelve rooms presents many handicaps in program making which are in many cases insurmountable. The small school plant is one of the greatest obstacles to the proper educational progress of the individual child. With only one grade in a classroom the teacher must frequently sacrifice the needs of the individual to the demands of the entire group. A laggard runs a great chance of remaining a laggard while the exceptionally bright child may readily become careless and indifferent because of neglect when the needs of the average members of the group seem most urgent. With two or more grades in a classroom, as must frequently result in the small building, the possibilities of constructing a program with full recognition of individual needs are correspondingly reduced. In a sixteen-room building housing eight grades, it becomes possible, where approximate equality in grade numbers prevails, to segregate children into half-year groups without adding to the teacher's instructional burdens. As the number of rooms increases a greater differentiation according to ability becomes a possibility. The maximum number of rooms is reached in an elementary school of thirty-two to thirty-six elementary classrooms.

Where the entire elementary school plant of a school system is comprised of buildings of few rooms only, it becomes advisable to plan in administrative unit groups of three or four buildings which are placed under the supervision of one non-teaching principal. This plan entails

longer walking distances from home to school for many children. This disadvantage is distinctly offset by better group grading with its natural concomitant, better teaching.

Desirable types of school programs. — The teacher who is placed in charge of a class of thirty-five to forty children of one grade will find greater professional satisfaction in arranging two sections for the class on the basis of ability to progress even though the teaching task in this form may present more difficulties. The daily programs for two sections will be separate only in respect to two or three formal subjects and combined in the other fields. Until a few years ago the department plan of instruction and subject promotion were features of high school programs only. With the addition of special subjects and special equipment in the elementary schools and the desire to bring down to the elementary field the attractive features of the high schools, the elementary child secured the advantages of these radical departures from the conventional group promotion and one-teacher-per-class plans. Department teaching has met with success even in the lowest grades.

The majority of schools will profit by arranging that phase of department teaching beginning with the fourth or fifth grades which can be best adjusted to the floor plan and special equipment of the school building. Factors that must be considered are: the possibility of passing without loss of time from classroom to classroom, the availability of a sufficiently large study room and the arrangements for the books and supplies of the children where permanent seats cannot be assigned. In arranging programs for large elementary or high school groups, the

block system of program-making will solve many difficulties.¹

TABLE XXXI
PROGRAMS OF HORACE MANN SCHOOL,
GRADE II

9.00-9.15 CHAPEL EXERCISES				
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Nature 9.15 Reading 9.35 Arithmetic 9.55 English 10.20	Nature 9.15 Reading 9.35 Arithmetic 9.55 English 10.20	Reading 9.15 Penmanship 9.40 Arithmetic 9.55 English 10.20	Nature 9.15 Music 9.40 Arithmetic 9.55 Reading 10.20	Nature 9.15 Reading 9.40 Arithmetic 9.55 Chorus 10.20
10.40-10.55 RECESS				
Gymnasium 10.55 Reading 11.15 Art 11.45 Pen. 12.20 Music 12.40 Free 12.50	Gymnasium 10.55 Reading 11.15 Spelling 11.45 Penmanship 12.10 Free 12.25	Gymnasium 10.55 Reading 11.15 Spelling 11.45 Music 12.10 Ind. Arts 12.25	Gymnasium 10.55 Reading 11.15 Penmanship 11.45 Ind. Arts 12.00 English 12.30	Gymnasium 10.55 Reading 11.15 Art 11.50 English 12.20 Free 12.40

¹ Economies in High School Management, Myron Richardson, School and Society, Vol. VI, p. 686.

GRADE VI

9.00-9.15 CHAPEL EXERCISES

Language	Art	Lang. & Spell.	Art	Ind. Arts
9.15	9.15	9.15	9.15	9.15
Geography	Arithmetic	Arith. Study	Arithmetic	to
9.50	9.50	9.50	9.50	10.25
Arithmetic	History	Lit. & Read.	Composition	History
10.25	10.25	10.25	10.25	10.25

11.00-11.15 RECESS

Music	Chorus	Geography	Geography	Lit. & Read.
11.15	11.15	11.15	11.15	11.15
History	Study	Study	Lit. & Read.	Lang. & Spell.
11.50	11.50	11.50	11.50	11.50
Science	Gymnasium	Gymnasium	Gymnasium	Study
12.25	12.25	12.25	12.25	12.25

In Table XXXI are given two programs of the Horace Mann School of Teachers College, Columbia University, as they were being followed in the 2d and 6th grades in January, 1919. The single session plan in use in this school is not desirable for elementary schools and is also unsatisfactory for high schools, except in the very large cities. In Horace Mann, the opportunity for departmentalization and specialization is afforded, thus causing variations in the programs for each day of the week.

Program for a one-teacher school. — A very desirable form of program for a one-teacher rural school is outlined in Table XXXII.¹ The number of grades has been reduced

¹ Prepared by Miss Mabel Carney, Teachers College, Columbia University.

TABLE XXXII

A WORKABLE RURAL SCHOOL PROGRAM

9.00- 9.15	Opening exercises
9.15- 9.25	First reading
9.25- 9.40	Second reading
9.40-10.05	Number — Grades 2 and 3. (Together, alternately, or with time divided)
10.05-10.30	Arithmetic — Grades 5 and 7. (Together, alternately, or with time divided)

Recess

10.45-11.00	First reading and phonics
11.00-11.10	Second word drill and phonics
11.10-12.00	Geography — Grades 3, 5, 7. (Time distributed according to class needs)

Noon

1.00-1.15	First reading
1.15-1.30	Second reading
1.30-1.45	Third reading
1.45-2.00	Spelling — All grades above first
2.00-2.30	History (4 days) — Grades 5 and 7. (Together, alternately, or with time divided)
	English (Friday)

Recess

2.45-3.05	General primary class — Grades 1, 2, 3. Story telling, nature study, industrial arts, drawing, and language.
3.05-3.30	Reading and English — Grades 5 and 7
3.30-4.00	General advanced class — Grades 5 and 7. Nature study or agriculture, home economics, hygiene, industrial arts, and drawing.

from eight to five by eliminating the third, fifth, and seventh grades. Classes alternate in certain subjects during the same period on the various days of the week, while classes are combined in some subjects as sixth and eighth grade reading. Some subjects are taught in relation to others; as, for example, language in the fourth and sixth grades, in relation to geography and history. For other general purposes, such as nature study, science, and the like, the school is divided in the upper and lower groups.

The Gary program. — The most elaborate programs evolved for elementary schools are probably those of the Gary type. The Table on page 228 reproduces a Gary school program. The construction and successful management of such a program requires a maximum of administrative and supervisory skill. To trace any child through a day's school work, it will be necessary to select one class number and follow its course throughout all periods of the day.

Promotional plans. — In the development of the daily class programs, principals and teachers will be conscious of the sole reason for their existence, the progress of each individual child. The plan of promoting children annually has long been superseded in progressive school systems by various types of promotional schemes. These promotional plans permit of frequent promotions during the year and recognize the possibility of "skipping" on the part of the exceptionally bright child. Where such plans are in operation, the teacher is allowed freedom in interpreting the course of study in its application to the needs of individual children. To the child comes the realization of the privilege of progressing according to his ability. Thus is furnished an incentive for superior work. The adjust-

ments of school progress plans and deviations from the traditional interpretation of the course of study have become numerous and varied. In many schools excellent variations are practiced by which the utmost of flexibility in promotions and adjustments for the individual is found possible. In the cases where such variations have been reduced to diagrams and given publicity, it is seen that the pendulum has even swung back to the extreme of individual recitation and individual instruction with its accompanying loss of social values.

The Batavia system. — The “Batavia system” may be considered a compromise between the extreme of individual instruction and class instruction only. It was first instituted in Batavia, N. Y., by former Superintendent Kennedy, for the purpose of overcoming the difficulties connected with the extremely large elementary classrooms of that city. Where class groups become large, the plan provides for the relief of the regular teacher from the responsibility of bringing up the stragglers. A trained assistant teacher is provided to coach the laggards. This teaching aid tends to assure equality of progress as the assistant labors with the individual child who is slow and backward, as well as the child who is falling back because of absence, illness, and like reasons. Equality of progress in a school may indicate a disregard for the needs of the bright child. In every school children can be found who with ease can cover the work of $1\frac{1}{2}$ years for each year which they spend in school. Deviations from the Batavia plan by which coach teachers are provided in a school for the purpose of assisting any child whose rate of progress may be greater or less than that of the class are worthy of imita-

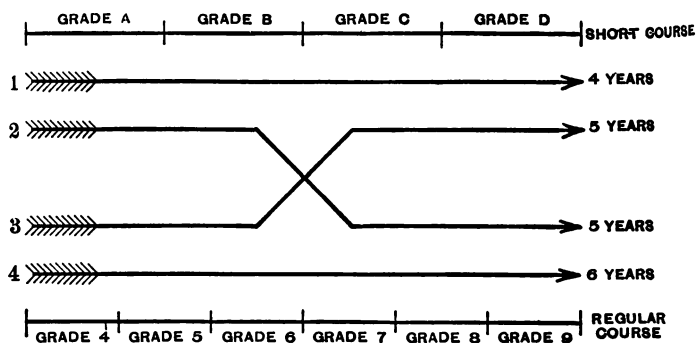
[illegible]

tion. The additional salaries paid to coach teachers are good investments for a community.

The Cambridge plan. — Another distinct type of adjustment is called the Cambridge plan. The old Cambridge double track plan has been replaced by a new plan providing for transfers at more frequent intervals than in the old plan.

Under this plan two parallel courses are provided which make it possible for the gifted child to finish the eight years of elementary school within a period of six years. The diagram¹ of the old Cambridge plan affords a good illustration of the underlying principles, although it was designed for the upper six years only of the elementary school.

FIGURE VI



The short course is divided into four grades, A, B, C, and D, the regular course into grades fourth to ninth. By doing the work of the short course the child finishes the six years in four as indicated by arrow numbered 1. By

¹W. H. Holmes, *School Organization and the Individual Child*, The Davis Press, Worcester, Mass.

completing the first two years in the short course and then transferring to the seventh grade, five years are required. This is indicated by arrow 2. By making rapid progress with Grades C and D, after having spent the first three years in the regular course, the time is reduced to five years, as shown by the third arrow. Arrow 4 indicates no change from the regular course of six years. The new Cambridge plan involves grades one to eight and offers during the elementary period five points of transfer without loss instead of one as in the old plan.

The Santa Barbara plan. — The so-called Santa Barbara plan provides for a threefold differentiation of subject matter with the purpose of reducing non-promotions to a minimum. Under this plan the course of study is divided into (a) minimum essentials, (b) average course, (c) course for the superior group. All children including the slow are thus permitted to do a year's work in a year's time, since no more is required of them than they are capable of doing. The lack of provision for rapid advancement of the gifted child is a criticism of the plan.

Special classes for children of special needs. — These departures from conventional progress plans are only partially successful in meeting the problems of the individual child. Children with especial needs will be treated most wisely when segregated into special classes with teachers who are trained to cope with the difficulties which they present. Special classes of many types are to-day in existence and vary to conform to local needs. State laws have already become operative which required the formation of special classes for children who are three years retarded or more. These laws establish the number of children to be

taught in such classes. Without waiting for legal enactment it is not only humane but economical of the time and energy of teachers as well as extremely advantageous to children to plan special classes when the need becomes apparent. Rapid-instruction classes for the non-English-speaking child, classes for physically defective children such as the blind, deaf and dumb, classes for the exceptionally gifted child are among the types which are most frequently needed.

The selection of bright children for special class instruction has been meeting with much deserved approval from many superintendents and supervisors. An acceptable plan followed with such classes is to cover the subject matter of the grade in a much more intensive and extensive manner than is possible with the normal groups. Where because of physical or social reasons it seems inadvisable to permit such children to skip grades, this superior kind of work may be done. The selection of children for these classes must be skillfully made. From children with intelligence quotients of 120 or above, who are placed in such groups, exceptional results should be expected. The class may bear the name of Opportunity Class, Special Class, or the like, thereby not provoking any invidious distinctions. In small school systems, it is quite as possible to make segregations on the basis of superiority as well as on any other basis. Three or four schools may unite in building such a class which will meet in a room as centrally located to the members of the group as possible. The longer journey to school required of some children will be easily offset by the advantages gained. Class groups of exceptional children may with safety be formed from two or three grades,

since the problems of instruction are solved with relatively slight difficulty.

Vacation classes. — Summer vacation classes planned for the purpose of allowing children who have become retarded to regain grades or children who can advance rapidly to skip grades are increasing in number. School maintenance expenses are lower in summer than winter. Children's days and weeks are frequently undirected during two months of the year. These are among the reasons why an extension of the school year to include many of the summer weeks is desirable not only for the few children of the vacation classes but for all children.

Teachers of all grades are interested in the progress of children not only through their own grades but into the grades and schools beyond. The teacher's task is not preparation for the next grade above but for a complete school life and the work of the world. The reorganization of the upper grades into intermediate schools and the establishment of a greater coördination between intermediate and high schools are welcomed tendencies in the betterment of school systems. These changes are significant in their effect upon the progress of pupils and thus upon the outlook of the teacher. It is significant in the work of a teacher to know that larger percentages of his pupils will pass through the eight grades into high school. It gives purpose to teaching to know that larger percentages of children are being guided into vocations for which their natural aptitudes fit them. The problems of a teacher become real when the courses and schools beyond also consider the individual child and teach him in terms of a definite preparation for life.

QUESTIONS

1. Using the time distribution for subjects as given in Table XXIX, develop a program for a week in the grade in which you prefer to teach.
2. Why is it professional and proper for a teacher to continue with his regular program when a supervisor visits his class?
3. Compute the time spent by the class in the formal subjects. Compare with the average for fifty cities. If you have the results obtained from the measurement of your class with any standard scales, determine whether the time allotments in those subjects should be changed on the basis of such results.
4. Do you teach more than ten recitations a day? If so, re-organize your program by combining classes or rotating subjects so that all children will be well provided for and that the teacher may not be required to teach too unreasonable a program.
5. What values are secured from a proper grading of children in class groups?
6. Discuss the differences in purpose and results between the "eight and four" and the "six and six" plans of school organization. What plan is being followed in your school system? Discuss the advantages and disadvantages of this plan.
7. Why is it desirable to increase the number of promotional periods during the school year?
8. Discuss the desirability of flexibility in the promotional plan of a school. Has the Cambridge plan advantages not inherent in the Santa Barbara plan?
9. Determine whether any of the following phases of departmentalization is possible in your school:
 - (a) Departmental teaching in one subject only.
 - (b) Departmental teaching in one session only.
 - (c) Departmental teaching in arithmetic, English, and geography only.
 - (d) Complete departmentalization.
10. What are the administrative obstacles that are sometimes difficult to overcome in the planning of departmental teaching?

11. Discuss the relative advantages of the annual and semiannual promotional plans.

12. What opportunities can you provide so that the non-English-speaking child of your school may overcome his tremendous handicap?

13. What valid reasons can the citizens of your community advance for not having provided a sufficient number of kindergartens in your schools so that all children of kindergarten age may be provided for? Why should grade teachers heartily support the kindergarten?

14. What needs exist in your community for classes for children younger than of kindergarten age, as are being provided in England?

15. Arrange the number of hours which should be required for home study of the children in each grade. Study the after-school time of children to ascertain whether these requirements are too exacting.

16. Become familiar with the home life of the children of your school to ascertain whether home study presents insurmountable difficulties. If opportunity is not afforded for study at home because of congested quarters and uncongenial surroundings, can the school program be so arranged as to meet this need?

17. Arrange a plan which will permit you to maintain your program schedule. Why is it unwise to permit constant deviations from the program?

18. Present arguments for and against departmental teaching in grades above the fourth. Does the teacher or the pupil gain greater advantages from this plan?

19. In arranging A and B sections in one grade, what percentage of the teacher's time can be spent in teaching the group as a whole? What subjects in your curriculum require separate instruction for each section?

REFERENCES FOR READING

- Bagley, W. C., Classroom Management, Chapter IV.
Holmes, W. H., School Organization and the Individual Child.
Perry, The Management of a City School, Chapter V.

CHAPTER XI

THE HEALTH OF SCHOOL CHILDREN

THE vital problem. — The health of its children is the first care of the school. Arithmetic can be taught to children who are below standard in health. From a class of children unembarrassed by physical discomforts superior results may, however, be expected. When ill health requires that a child frequently absent himself from school, not only the child but his classmates and his teacher also suffer loss. The classmates are deprived of his companionship and his contributions to the work of the group. The teacher must devote additional time in a repetition of guidance and instruction. When the bodies of children are permitted to suffer from unnecessary disease and sickness, the probabilities of long life and successful careers are considerably decreased.

The health program. — Much had been written before the World War in an effort to educate the public and the teaching force of the country in the need for great emphasis upon its health problems. The result of draft board and camp physical examinations has been to arouse the entire country to that state of mind which should make it comparatively easy in any community to inaugurate and press to successful culmination extensive school health pro-

grams. Such programs will involve departures from the past conservative policies of many of our cities. Instead of a provision of one school nurse for 3000 children the standard of one nurse for every 1000 children will not be found too high. Medical inspectors will be expected to cure where in the past inspection alone has prevailed. Medical, surgical, and dental clinics will multiply with exceeding rapidity. It may not be too much to anticipate a very appreciable reduction in the curable and preventable defects and diseases of children.

The teacher's health. — Teachers are, first of all, interested in school health discussions and programs because of the necessary vital result on their own status and their own work. The studies that have been made, involving the health of teachers and the health problems involved in teaching, show an excessive number of cases of tuberculosis, neurasthenia, anæmia, and other physical disorders existing among the teachers of such countries as Canada, Denmark, England, and the United States.¹ Such facts must become matters of real concern to all teachers, not only because of the effect upon themselves, but also because of the possibility of the effect that any disease or disorder ultimately may have upon the health of the children of the classroom.

The report of the provost marshal. — The need that exists for a complete extension of school medical service has been a subject of nation-wide discussion since Provost Marshal General Crowder made available these draft figures showing rejections by draft boards on physical grounds.

¹ Terman, *The Teacher's Health*, Riverside Educational Monographs, Boston, 1913.

Total called	3,082,945
Total examined by local boards	2,510,706
Total rejected by local boards for physical reasons	730,756
Percentage rejected of those examined	29.11

Of 2,510,706 men physically examined by local boards, General Crowder points out that 29.11 per cent were rejected as unfit for service. To this percentage of rejections by the local boards may be added the rejections at the cantonments. The medical corps at the cantonments have rejected from two to eleven per cent of the men certified by the local boards. The total rejections must therefore be somewhere between 31.11 and 40.11 per cent.

In the analysis of the selectives for the National Army by Dr. Fisk and in the 1915 report of the United States Navy and Marine Corps by the Surgeon General, the chief items of rejection have been eyes, teeth, underweight, hernia, heart, and feet. These items constitute defects which can be prevented largely, or corrected entirely, by adequate attention to child hygiene and physical education.

The teacher's part. — The teacher may play a very constructive part in the reduction of some of these serious defects. Only to the degree that teachers give their full support to the school health program will the changes be wrought which will give each child healthful surroundings and reasonable immunity from contagion. The teacher's share in such a program may be made very helpful without encroaching on the domains of the medical profession or of the school nurse. The teacher is not expected to be equipped for diagnosis of disease, since that responsibility should always rest with the medical profession. The teacher should,

however, train himself to become thoroughly expert in detecting tendencies toward indisposition on the part of children. The child who pretends to be ill in order to escape work should be segregated with care from the children actually in need of attention. Constant application, alertness, and common sense, coupled with the training that can be given by the school nurse or the school physician, are qualities which will assist the teacher in the extension of the school health program. Only a highly sympathetic bond between home and school will make the program effective. The policies of the school health department and the nurse's work in sanitation and prevention of disease should be supported by the teacher with an enthusiasm which will transfer directly into every home from which his pupils come.

The instruction of parents. — Teachers may through parents' meetings acquaint parents with the significant indications of health disorders in children and inform them when to keep children out of school. Nausea or vomiting, chill, convulsions, dizziness, faintness or pallor, eruption of any kind, fever, running nose, red or running eyes, sore or inflamed throat, swollen glands, coughs, and failure to eat the usual breakfast are symptoms of health disorders¹ which require the attention of family physicians, school nurse, or school physician before the child afflicted returns to school. Parents must learn to recognize these disorders. They will thus prevent the inroads of contagious disease upon the constitutions of many children. It has been pointed out from time to time that deaths among school

¹ Health Essentials for Rural School Children, Dr. Thos. D. Wood, Teachers College, Columbia University.

children from contagious disease increase suddenly when schools open, reach their highest curve in winter, and decrease when schools close in the spring.¹ As a child's age increases the less apt he is to catch a contagious disease, and the severity of the disease is also diminished as the age of the child increases. The fatalistic doctrine that prevails in many quarters to the effect that children must have all the diseases of childhood should be opposed most vigorously by teachers in their support of the school health work.

The measurement of success of medical inspection.—The teacher may also be highly instrumental in aiding in establishing a proper type of health record system in the school organization. Neither teacher nor pupil can afford to spend school time in securing physical or medical records when the data are not registered so as to give a complete health history during the child's school life. Every school child should have a health examination every year. The results of such examinations must form a part of a consecutive health history from the kindergarten through the high school. The complete record of this entire period must be made available for every teacher, so that all problems may be solved in the light of past defects reported to parents and past results secured from a home and school coöperation. The success of all medical inspection will best be measured in terms of percentage of results secured and not in terms of percentages of defects found.

Sight and hearing tests.—Although teachers are not equipped to make diagnoses of disease they may assist greatly in detecting defects of sight and hearing. Dr. T. D.

¹ Best, L. A., Proceedings of American School Hygiene Association, February, 1911.

Wood in his "Health Essentials for Rural School Children" gives the following directions to teachers for testing eyesight and hearing.

"The eyes of children who wear glasses should be tested with the glasses, and if found normal, should be so recorded.

"Hang the Snellen test letters in a good clear light (side light preferred) on a level with the head, and so placed that the child does not face a strong light. Place the child 20 feet from the letters. Cover one eye with a card held firmly against the nose, without pressing on the covered eye, and have him read aloud, from left to right, the smallest letters he can see on the card. Make a record of the result.

"Children who have not learned their letters, obviously cannot be given this eyesight test. Pupils who cannot read may, however, be tested by charts with pictures of familiar objects designed for this purpose.

"There is a number over each line of the test letters which shows the distance in feet at which these letters should be read by a normal eye. From top to bottom, the lines on the card are numbered respectively 50, 40, 30, and 20. At a distance of 20 feet, the average normal eye should read the letters on the 20 foot line, and if this is done correctly, or with a mistake of one or two letters, the vision may be noted as $\frac{20}{20}$ or normal. In this fraction the numerator is the distance in feet at which the letters are read, and the denominator is the number over the smallest line of letters read. If the smallest letters which can be read are on the 30 foot line, the vision will be noted as $\frac{20}{30}$; if the letters on the 40 foot line are the smallest that can be read, the record will be $\frac{20}{40}$. If the letters on the 50 foot line are the smallest that can be read, the record will be $\frac{20}{50}$.

"If the child cannot see the largest letters (those on the 50 foot line), have him approach slowly until the distance is found from which they can be seen. If 5 is the nearest distance from which the 50 foot letters can be read, the record will be $\frac{5}{50}$ ($\frac{1}{10}$ of normal).

"Test the second eye, the first being covered with the card, and note the result as before. With the second eye, have the child read the

letters from right to left, to avoid memorizing. To prevent reading from memory, a hole $1\frac{1}{2}$ inches square may be cut in a piece of cardboard, which may be held against the test letters so as to show only one letter at a time, and which may be moved about so as to show the letters in irregular order. A mistake of two letters on the 20 or 30 foot line and of one letter on the 40 or 50 foot line may be allowed.

"Parents should be notified if:

"(a) Vision in either eye is $\frac{20}{40}$ or less.

"(b) Child habitually holds head too near book (less than 12 inches).

"(c) Child frequently complains of headache, especially in the latter portion of school hours.

"(d) Either eye deviates even temporarily from normal position.

"TEST OF HEARING. If it is possible, one person should make the examination for an entire school in order to insure an even method. The person selected should be one possessed of normal hearing.

"The examination should be made with the whispered voice: the child should repeat what he hears, and the distance at which words can be heard distinctly should be noted. The two ears should be tested separately. The test should consist of numbers 1 to 100 and short sentences. To avoid imitation, it is best that but one pupil at a time be allowed in the room.

"For very young children a fair idea of the hearing may be obtained by picking out the backward or inattentive pupils and those that seem to watch the teacher's lips, placing them with their backs to the examiner and asking them to perform some unusual movement of the hand or other acts."

The remedies for defects discovered.—Tests given under these directions are of no significance except as remedies for defects are applied. Society will have profited by such tests only as the classroom seating of children with defective hearing has been changed to permit of the most active participation in the classroom work and as eye-glasses are provided those children who need them. Where

parents are unable to purchase eyeglasses, the child should not be allowed to suffer. It is a comparatively easy matter to secure funds for such purposes.

The rights of school children. — Many of the discussions of the democratic bases of society center about concepts of responsibilities and duties rather than any concepts of rights. All too often in the consideration of education as a state function it happens that the idea of the rights of individual children is not greatly stressed. The state has laid down certain fundamental theses showing the reasons why children should attend school. The child himself may in many communities build a very strong argument, advancing at least ten different reasons why he should not be required to attend school because of the serious injury that may result to his health. The teacher has a part to perform in eliminating these very serious handicaps to the health of children and hence to the educational program of the state.

The humidity of the classroom air. — The reasons which a child or his parents may well advance for his non-attendance at school are reasons based upon conditions found to exist in many of our school systems. One factor of school housekeeping given little consideration by the teacher has reference to the amount of humidity that should prevail in the classroom. It is unfortunate that many ventilating systems operate on such a principle as to eliminate all the moisture from the atmosphere of the classroom. It is a well-known fact that when a large percentage of moisture is taken out of the air, the effect upon the child is such as to produce nervousness, restlessness, and nose and throat troubles. Teachers may easily fa-

miliarize themselves with the method of measuring the amount of humidity that is found in the air at any time. An exceedingly interesting problem for children to solve, especially children in the upper grades, is the discovery of the relative humidity of the classroom. It is obvious to all teachers that children ought not to be asked to spend hours of their time in classrooms the atmosphere of which is as dry as that which hovers over the Sahara Desert. In most of our school systems, classrooms are found during the winter months in which this undesirable state of dryness does exist, although the humidity outside the school building may vary from 60 to 90. Frequently teachers attempt to overcome the intense dryness by placing pans of water here and there about the room. The plan that does prevail of placing water containers of sufficient size in the vicinity of the radiators has merit in it. When proper attention toward providing humidification is paid as new buildings are being planned, resort to these plans will not be necessary. A simple and relatively inexpensive instrument utilized for measuring humidity is a "sling psychrometer." It may be purchased from any of the school apparatus houses.¹

One hundred and eighty-one different readings² made with the use of a sling psychrometer in buildings selected at random throughout a large school system show that only 16 per cent of the readings obtained in the buildings mentioned were above 29 per cent relative humidity, while only 7 per cent were above 45 per cent relative humidity.

¹ For list of such houses, see *The Educational Redbook*, C. F. Williams and Son, Inc., Albany, N.Y.

² St. Paul School Survey, Dept. of Ed., St. Paul, Minn., 1917.

The standard humidity for a classroom is considered to be about 50 per cent.

The temperature of the classroom. — The surveys of many school systems made during the past few years show that notwithstanding the great stress which has been placed by school officials upon the necessity for maintaining proper schoolroom temperatures, the tendency toward greatly overheating classrooms has not been curbed. Teacher and pupils will gain by insisting upon keeping the temperature of the room below 68 degrees Fahrenheit and nearer 65 degrees than 68 degrees. The thermometer should frequently be tested. An instrument less than accurate should be discarded. A good test consists of collecting at intervals all of the thermometers of a building and placing them in a row in one classroom. After a sufficient period the defective instruments are easily discovered. In giving a thermometer a permanent position in a classroom, it is well to avoid the sections of uneven heat or cold. A height of about seven feet from the floor is desirable.

The ventilation of classrooms. — Much experimentation has been engaged in of recent years in attempts to solve scientifically the problems of heating and ventilating. The net results of all such experimentation have been to leave much doubt regarding the advantages of mechanical systems of ventilation, though as regards the temperature of classrooms the range of 65 degrees to 68 degrees is rather uniformly accepted as standard. With the temperature as indicated, with the classroom air moving and sufficiently moist, and with the air that is brought into classrooms free from dirt and dust, the conditions may be rated as satisfactory.

In schools where no mechanical system of ventilation is provided, the wise teacher will present the ventilating problems to classes of 6th, 7th, and 8th grade boys for solution. Window boards, or cheesecloth screens, planned with the idea of preventing drafts and yet permitting plenty of fresh air to enter and to circulate, may readily be made class projects correlating the work of various subjects. If the necessary materials are not readily obtainable, the problem becomes the more interesting and presents a real "felt difficulty to be solved." The teacher who, irrespective of the difficulties presented, provides for his classroom the standards of ventilation indicated, *i.e.*, clean, moving, warm air, exhibits qualities which tend greatly toward teaching success.

Sanitary air chambers. — Inspection of a large number of school buildings in various parts of the United States with mechanically operated ventilating devices leads to the belief that as much skill and foresight is required on the teacher's part in securing properly ventilated classrooms in such buildings as in buildings which are not so equipped. Unfortunately only a few years ago it was the custom in the erection of school buildings to provide plenum or air chambers into which the air was drawn directly from the ground level. The results of this plan of installation are in evidence in ceilings and walls about air registers streaked and soiled with dirt. It has meant the transfer into classrooms of ashes, dust, and all types of dirt particles which are to be found on playgrounds, in passageways and on the level of the street. Inspection of plenum chambers which take the air from street levels will frequently show them lined with the accumulated dust of years and utilized as storage

places for manual training supplies or other accumulations. Teachers will assist in securing better school housekeeping by learning whether the chambers from which air is fed into their classrooms are clean and sanitary.

Pupil participation in the betterment of school housekeeping.— It becomes clear that where unsanitary conditions are permitted to continue over a long period teachers and children suffer most. In aiding the administration department in correcting such evils, grade children may do much by carefully studying conditions, learning standards of school hygiene and sanitation, and presenting reports to principals suggesting improvements and offering to participate in producing bettered conditions. The white-washing of air chambers three or four times a year is a task that boys will eagerly undertake when wisely guided. The installation of an air washer may be a welcome task to boys, while the possibilities of utilizing a few drawing periods in analyzing the ventilation system and making plans for betterment are not to be scorned. No higher motivation for school work can be found than is possible here, *i.e.*, the preservation and extension of life. Greater teacher and pupil participation in securing better school housekeeping may arouse many incompetent or indolent janitors from the lethargy which evidently surrounds them.

Children frequently act as thermometer readers. They should also be interested in the temperature and humidity reports of the local weather bureau. Charts and graphs made by children showing comparisons between indoor and outdoor conditions can be made a part of the arithmetic work. Problems involving the cubic capacity of the classroom, the number of cubic feet of air available for each occupant,

the amounts of air entering and leaving the room, with comparisons with acceptable standards, may well supplant textbook problems involving similar operations.

The natural lighting of classrooms. — No less important to both teacher and pupil are the lessons which may be taught in relation to the lighting of schoolrooms, both natural and artificial. In the case of most children there is considerable strain in the adjustment of human eyes to the difficulties of the printed page. The additional strain imposed by requiring the attendance of children in classrooms that are inadequately and improperly lighted cannot be excused. The school building surveys of Salt Lake City, Utah, Denver, Colo., St. Paul, Minn., Omaha, Neb., and Paterson, N.J., report that hundreds of teachers are being required to teach in these cities in schoolrooms that fail in most particulars in meeting acceptable standards. In the case of old buildings which are still fairly suitable for school purposes, it is sometimes found possible to remodel in such a way as to overcome the main objections to poor natural lighting. It is possible in all buildings to install systems of artificial lighting which meet the searching tests of modern knowledge.

Teacher insistence on conformance to building standards. — Building programs involving modernization of some buildings and the complete abandonment of other buildings found inadequate in the light of modern needs have become features¹ of the educational policies of progressive Boards of Education. When architects, unfamiliar with school standards, are impressed with the fact that the teachers

¹ A School Building Program for Cities, N. L. Engelhardt. Bureau of Publications, Teachers College, Columbia University.

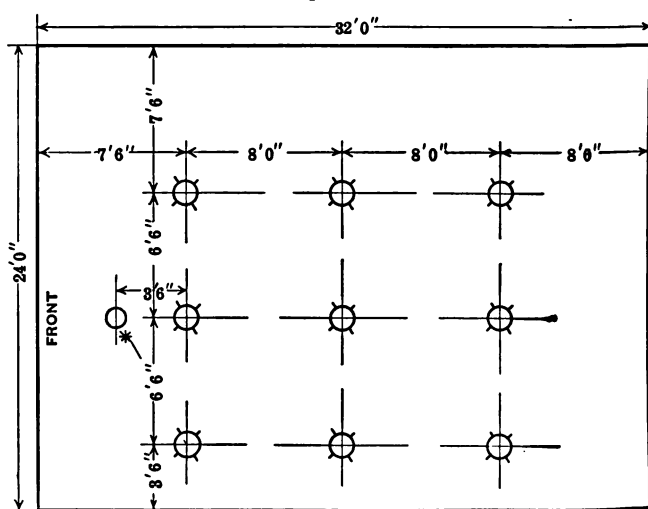
who will teach in their buildings will constantly measure the architectural features by modern standards, the erection of buildings which conflict with those standards will not occur as frequently as in the past. It is unfortunate that school buildings were being built in the United States in 1919 which conform in no greater degree to educational needs and health standards than did the buildings of two decades previous. The teaching group of any city may assist much in preventing architectural building faults by becoming familiar with standards and making the public realize the importance of adherence to them in all future constructions.

The artificial lighting of classrooms. — Frequently, all too little attention is paid the problem of the artificial lighting of classrooms. Schoolrooms provided with no artificial light for dark days or so equipped as to secure poor results from the lights furnished do not permit of the best educational progress. An equipment producing adequate results consists of six 100-watt frosted Mazda lamps or nine fixtures involving the same wattage arranged as in Fig. VII.

Semi-indirect lighting is more satisfactory than either direct or the totally indirect lighting. In semi-indirect lighting, the source of light is placed above or behind a translucent reflector whereby most of the light is sent to the ceiling though a part of the light is diffused through the glass. In refitting old classrooms with modern lighting equipment, it should be borne in mind that teachers utilize classrooms after the children have gone for the day and that special provision should be made for them for artificial lighting. A connecting plug provided in the floor near the teacher's desk will permit of the use of a small desk lamp for teachers

FIGURE VII

Standard schoolroom lighting layout with nine lighting units and a connection in front for a lamp on the teacher's desk.



Window Side of Room.

and also will permit of the wide use of a projection lantern, as the floor plug may be made available for both purposes.

Facilities for drinking. — The health of school children depends in a large degree upon school provisions for pure drinking water and also upon adequate equipment which will permit of sufficient opportunity for keeping their bodies, hands and faces clean. Volumes have been written emphasizing these needs. Unfortunately, the theories that have been discussed in these volumes have not transferred sufficiently into practice. It may be due to the fact that the classroom teacher has not as yet accepted sufficient responsibility in assisting the administrative staff of the school

system in molding public opinion in this direction. Evidently sufficient betterment will not be produced in the direction of providing better hygienic conditions unless all teachers make their contribution to the cause. This contribution can only be made where teachers are familiar with the standards that have been developed and with the conditions as they exist in entire school systems. A very reasonable standard for drinking fountains has been established. The supply of fountains deemed essential by those who have studied the problems involved is one fountain for every 75 children. This standard has not been adequately met in large school systems, as has been shown in the school surveys of such cities as Paterson, N.J., Omaha, Neb., St. Paul, Minn., and Denver, Colo. In the city of St. Paul, 67 per cent of the school buildings were in 1917 inadequately equipped with fountains. In the city of Paterson, in 1918, 41 per cent of the school buildings were inadequately equipped. Similar inadequacies will appear in many school systems where the entire situation is measured with this standard. A drinking fountain, it must be borne in mind, is in no sense superior to the obsolete drinking cup, if children, when drinking, find it possible to take the bubbler into their mouths and if the flow of water, when the fountain is not in use, is not sufficient to cleanse the bubbler for the next child. Drinking fountains can be found which are so constructed as to permit drinking without having any portion of the lips or mouth in contact with the metal parts of the bubbler. In the very best fountains the water that comes in contact with the mouth is also not permitted to return to the source of supply. The standard fountain does not hamper the janitor in his sweeping and also is made acces-

sible for children of all heights. Teachers will always endeavor to prevent the installation of fountains in toilet rooms. Architects have frequently committed this very serious error. Fountains should be provided at convenient places on each floor of every building.

Facilities for washing and bathing. — That not enough emphasis has been placed upon a policy of cleanliness of person becomes evident when groups of school children in many of our cities come under observation. It is recognized that there are many homes in America where little instruction is given in body cleanliness and indeed where little opportunity exists for a child to come frequently in contact with plenty of soap, hot water, and a good bath tub. It is conceivable that children who are not physically clean are at a distinct disadvantage when it comes to doing high grade mental work. It is also clear that the transmission of contagion may most frequently result in cases of children who have not had sufficient opportunity for bathing. Teachers no doubt find it possible to secure better results from the clean, healthy child than from the child who has not been trained at home in health hygiene. In other words physical cleanliness has a distinct effect upon the teacher's record. It is quite proper, therefore, for the teacher to utilize his power in securing equipment and materials which will reduce uncleanness among children to a minimum.

The frequent insufficiency of wash bowls. — In many school systems where no shower baths are provided and where inadequate numbers of wash bowls exist, the practice also prevails of limiting the supply of soap, of towels and toilet paper to an unreasonably low amount. Not only should these articles be furnished in reasonable abun-

dance, but hot as well as cold water should always be at hand, while the equipment should be sufficiently extensive to permit of use by all children. It has been shown that in one school system 57.3 per cent of the children share the wash bowl which each of them uses with more than 200 other children. Assuming that the wash bowls are in constant use and allowing each child three minutes in which to wash, the regular turn for each child at the bowl would come every second day. In this same school system in the case of the 35.9 per cent of the children, each of whom shares his wash bowl with 300 or more children, the regular turn for each child would come every third day. Children are not being treated with proper judgment and care where such inadequacies are found.

The shower bath. — The school buildings situated in sections of cities where homes are not equipped with proper bathing facilities should all be provided with shower rooms for boys and for girls as well as swimming pools where the buildings are sufficiently large. For cleanliness and sanitation the shower bath is most satisfactory and most economical. No teaching staff should hesitate about recommending the installation of such facilities. Teachers are morally responsible for securing provisions for children when no opportunities for bathing exist in their homes. Shower baths had been recently installed in a school which gathered its children from a non-English-speaking parentage. The homes of these children adjoined the school building and "had hardly begun to show above ground." The children of this school were so unacquainted with bathing that they were very reluctant about utilizing the showers which were provided. When, however, the prin-

Excludes from local.

[illegible]

Name of fever	Onset	Course	Time of onset after exposure	Duration of illness
MUMPS	Onset may be sudden, beginning with fever and pain about the angle of the jaw. The swelling of the parotid gland is accompanied by pain.	Onset with discharge from one or both parotid glands.	Two weeks after onset and one week after the appearance of swelling and discoloration of parotid gland.	Until termination of swelling and as long as pain of parotid gland continues.
POLYOMYELITIS (PARALYSIS)	Onset sudden, fever, headache or dull pain in back, headache, vomiting, drowsiness and muscle groups.	Aggravated contact with a patient or contact with a patient.	Until patient is no longer a source of infection.	Until termination of fever and as long as pain of parotid gland continues.
SCARLET FEVER	Onset usually sudden, with headache, fever, sore throat, and redness of the throat. The rash is most first seen on the neck and chest and spreads through the rest of the body.	Onset with discharge from one or both parotid glands.	At least 30 days from onset of fever and 14 days from onset of rash.	Until patient is no longer a source of infection.
MEASLES	Onset usually with fever and general malaise. The rash is most first seen on the neck and chest and spreads through the rest of the body.	Onset with discharge from one or both parotid glands.	At least 30 days from onset of fever and 14 days from onset of rash.	Until patient is no longer a source of infection.
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* Immunes are those who have had the disease, or, in measles, have been successfully vaccinated. Disinfectant: The cleansing and disinfection of the person includes washing the nasal cavity and the outer garments out of doors before time are put on again.

clothing (or a change of underwear and a thorough bathing and bleaching of the outer garments out of doors before time are put on again).

principal of the school put the bathing on a competitive basis and offered a prize for the boy or girl who established the best record in bathing for a period of some months, the facilities of the school proved to be inadequate because every child desired to take a bath every day. This is an illustration of one means of securing from children a spirited participation in a campaign which will tend toward a maximum of cleanliness on their part.

The teacher's responsibility in cases of communicable diseases. — Upon the classroom teacher devolves much of the responsibility for detecting the symptoms of communicable diseases and reporting to the school nurse or the school physician. The first essential in this program is to know what diseases are considered to be communicable. In New Jersey, the sanitary code as amended Oct. 1, 1918, lists the following diseases as communicable: anthrax, chickenpox, Asiatic cholera, diphtheria, dysentery, glanders, influenza, leprosy, malaria, measles, German measles, meningitis, ophthalmia neonatorum, paratyphoid fever, plague, pneumonia, poliomyelitis, rabies, scarlet fever, smallpox, trachoma, trichinosis, tuberculosis, typhoid fever, typhus fever, whooping cough, and yellow fever. One of the greatest aids to the teacher in securing the best results from her participations in this part of the medical program is a chart of rules for isolation of children and their exclusion from school. This chart should be placed in the classroom, where it may be accessible at all times. Such a chart may take the form of the one issued by the New York State Department of Health and shown on pages 254 and 255.

Susceptibility charts. — In order to keep themselves best informed in regard to the "communicable disease history"

SCHOOL YEAR 1919..... GRADE..... ROOM.....

Teacher

[illegible]

NOTE.—Wherever possible indicate the years when each child has had any communicable disease as well as the year of successful vaccination. If year is not known, use (+) a plus sign to indicate that child has had disease.

of their grades, teachers will frequently find a "susceptibility chart" ¹ of the style shown here of value. This chart merely lists all the children of a grade and provides a square under the name of each disease in which the history of the child in respect to that particular disease may be briefly given. The personal disease history of every child becomes available at the time of his first school medical inspection and is then recorded on his permanent physical record card. It may be transferred to the class "susceptibility chart" by the teacher and additions made when children are ill with any communicable disease during the year. This chart may then be passed on to the next teacher of the children listed, who may in some instances find it possible to utilize the same chart or may make a new one as the need may arise. A "susceptibility chart" enables a teacher to become thoroughly familiar with the situation as a whole in respect to her class group. The need for precaution in greater or less degree will become evident as small or large percentages of the class are shown to have had any particular disease. Where schools have not as yet adopted a permanent physical record card system covering the entire medical record of each child during his school life, it will only be possible to obtain the desired personal disease history of children by asking parents to list the diseases which their children have had or to check them on a disease list prepared for that purpose.

Coöperation of children. — Whenever communicable diseases are discovered or suspected by any school agency, such

¹ New York State Department of Health, *Coöperation in the Control of Communicable Diseases among School Children*. Albany, N. Y., 1918.

CLASSROOM WEIGHT RECORD

[illegible]

Height and weight to be taken in house clothes, without shoes. Weigh on the same day each month. Age the nearest birthday. Let each child enter his own weight. Prepared by Dr. Thos. D. Wood.

HEIGHT AND WEIGHT TABLE FOR BOYS

Height Inches	5 Yrs.	6 Yrs.	7 Yrs.	8 Yrs.	9 Yrs.	10 Yrs.	11 Yrs.	12 Yrs.	13 Yrs.	14 Yrs.	15 Yrs.	16 Yrs.	17 Yrs.	18 Yrs.
39	35	36	37											
40	37	38	39											
41	39	40	41											
42	41	42	43	44										
43	43	44	45	46										
44	45	46	46	47										
45	47	47	48	48	49									
46	48	49	50	50	51									
47	51	52	52	53	54									
48	53	54	55	55	56	57								
49	55	56	57	58	58	59								
50		58	59	60	60	61	62							
51		60	61	62	63	64	65							
52		62	63	64	65	67	68							
53			66	67	68	69	70	71						
54			69	70	71	72	73	74						
55				73	74	75	76	77	78					
56				77	78	79	80	81	82					
57					81	82	83	84	85	86				
58					84	85	86	87	88	90	91			
59					87	88	89	90	92	94	96	97		
60					91	92	93	94	97	99	101	102		
61						95	97	99	102	104	106	108	110	
62						100	102	104	106	109	111	113	116	
63						105	107	109	111	114	115	117	119	
64							113	115	117	118	119	120	122	
65								120	122	123	124	125	126	
66								125	126	127	128	129	130	
67								130	131	132	133	134	135	
68								134	135	136	137	138	139	
69								138	139	140	141	142	143	
70									142	144	145	146	147	
71									147	149	150	151	152	
72									152	154	155	156	157	
73									157	159	160	161	162	
74									162	164	165	166	167	
75										169	170	171	172	
76										174	175	176	177	

PREPARED BY DR. THOMAS D. WOOD

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About What a BOY Should Gain Each Month

AGE	AGE	
5 to 8.....	6 oz.	16 oz.
8 to 12.....	8 oz.	8 oz.
	12 to 16.....	
	16 to 18.....	

HEIGHT AND WEIGHT TABLE FOR GIRLS

Height Inches	5 Yrs.	6 Yrs.	7 Yrs.	8 Yrs.	9 Yrs.	10 Yrs.	11 Yrs.	12 Yrs.	13 Yrs.	14 Yrs.	15 Yrs.	16 Yrs.	17 Yrs.	18 Yrs.
39	34	35	36											
40	36	37	38											
41	38	39	40											
42	40	41	42	43										
43	42	43	44											
44	44	45	46											
45	46	47	48	49										
46	48	49	50	51										
47	49	50	51	52	53									
48	51	52	53	54	55	56								
49	53	54	55	56	57	58	59							
50	56	57	58	59	60	61	62	63						
51	59	60	61	62	63	64	65	66						
52	62	63	64	65	66	67	68	69	70					
53		66	67	68	69	70	71	72	73	74				
54			68	69	70	71	72	73	74	75	76			
55					72	73	74	75	76	77	78			
56					76	77	78	79	80	81	82			
57						81	82	83	84	85	86			
58						85	86	87	88	89	90	91		
59						89	90	91	93	94	95	96	98	
60							94	95	97	99	100	102	104	106
61							99	101	102	104	106	108	109	111
62							104	106	107	109	111	113	114	115
63							109	111	112	113	115	117	118	119
64								115	117	118	119	120	121	122
65								117	119	120	122	123	124	125
66								119	121	122	124	126	127	128
67									124	126	127	128	129	130
68									126	128	130	132	133	134
69									131	133	135	136	137	138
70									129	131	133	135	136	137
71										134	136	138	139	140
72										138	140	142	143	144
											145	147	148	149

PREPARED BY DR. THOMAS D. WOOD

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About What a GIRL Should Gain Each Month

AGE		AGE	
5 to 8.....	6 oz.	14 to 16.....	8 oz.
8 to 11.....	8 oz.	16 to 18.....	4 oz.
11 to 14.....	12 oz.		

Try and do as much better than the average as you can

These cards may be obtained from the CHILD HEALTH ORGANIZATION
156 Fifth Avenue, New York

Weight and measure should be taken without shoes and in only the usual indoor clothes.

as the attendance department or the medical inspection department, immediate notice thereof should be sent to the local department of health. Parents should be urged to coöperate in reporting contagious diseases, even when cases are light and the services of the family physician are not needed. The school nurse and the medical inspector should be informed where the initial case of any disease has been reported. Their responsibility includes carefully examining the children who have come in contact with the disease, excluding all suspicious cases, and taking cultures where sore throats are discovered. The teacher will assist in reducing to a minimum the number of contacts made with suspected cases and in securing proper segregation for all such cases until the medical examinations can be made. Teachers who succeed in developing in their class groups the spirit of strict adherence to quarantine regulations will confer a great benefit upon the social group from whom the children are drawn. Exclusion from school is useless when children are permitted to run the streets, attend public or private gatherings, and thus increase the possibility of disease. It is often profitable for teachers to devote school-time in discussing with children the need for quarantine, the responsibility of the sick and the well in cases of communicable disease, and in establishing within the minds of children an attitude of respect toward quarantine cards and signs.

In developing lessons in civic responsibility, samples of the quarantine cards utilized by the board of health may form the basis of fruitful discussions. The group opinion molded in this way will assist in preventing the laxity that often prevails at quarantine time. Children must be taught

early in life to think in terms of their responsibility to their fellow members in society. Conformance to quarantine regulation offers many opportunities for unselfish and even courageous action.

The weight of school children. — A type of equipment which is being introduced into many school buildings for the first time is the much-needed scales which will enable children to weigh themselves at frequent intervals. Good scales are purchasable which also have attachments for measuring height. The United States Bureau of Education has issued a form of classroom weight record as well as the standards for height and weight for children of school ages.

The classroom weight record is reproduced on page 259. It may be displayed in a prominent place in the classroom and the weight facts for each child may be recorded each month of the year. Children should be encouraged to study these facts graphically and to make comparisons with the normal weights for children of their ages. The normal or average weights are recorded on pages 260, 261. Children should be encouraged to do better than the average for their ages. The instructions for weighing should be carefully observed.

Teachers may easily ascertain through such charts the children who are undernourished and for whom a special program of physical care must be arranged. Simple lunches provided for such children in the middle of each session or arrangements with local social organizations by which help is given in the homes may well form a part of such a program. A teacher may expect to find ambitious spirits in contented bodies.

Teacher sanitary survey. — A teacher survey, following the form used by nurses in some large school systems, should result in unifying opinion regarding the sanitary needs that exist in any school building. If all teachers will study the conditions found in their rooms as well as in an entire building in the light of the following questions and then will utilize the combined tabulations of their answers as the basis of a faculty discussion, a constructive future program may be expected to follow.

A POSSIBLE HYGIENIC SURVEY OF A SCHOOL BUILDING TO BE MADE
BY THE TEACHERS

1. Is damp sweeping practiced?
2. Is a moist cloth used for wiping up dust?
3. Has the feather duster been abolished?
4. Is any disinfectant used upon the floors?
5. Are the desks cleaned with a disinfectant?
6. Are the school desks disinfected when necessary?
7. Is the common use of articles which might carry infection avoided?
8. Are all the windows thrown open at recess?
9. If a stove is used in a room, does it have a "jacket" around it, and is there special arrangement for ingress and discharge of the air from the room?
10. Is the fresh-air inlet removed from toilets or other sources of contamination?
11. Is the room free from unpleasant odors at all times?
12. Are green or brown flat finish boards used instead of glossy black?
13. Are the floors oiled or otherwise treated to prevent dust rising from them?
14. Is the room temperature kept under 68 degrees and over 60?
15. Do the windows have an area equal at least to one fifth the floor area?

16. Are the desks so placed as never to face sunlight?
17. Is the room evenly lighted?
18. Are yellow or linen-colored shades used?
19. Is the tinting of the walls light enough?
20. Are neutral colors used?
21. Are the seats adjustable?
22. Are the desks adjustable?
23. When were they last adjusted to the pupils?
24. Are wooden footstools provided where the seats cannot be adjusted?
25. Is a light, dry, clean, ventilated room provided for clothing?
26. Are ventilating screens provided?
27. Are deaf pupils seated near the front?
28. Are pupils with defective vision seated near the front?
29. Are soap and towels provided in sufficient abundance?
30. Are sanitary drinking fountains provided?
31. Has the common drinking cup been abolished?

Basement

1. Are the floors clean and dry?
2. Are toilets clean and well ventilated?
3. Is the air wholesome?
4. Are toilets well shut off from air intakes?

General Sanitation

1. Is there a pleasant rest room for teachers and pupils?
2. Is any inspection ever made of pupils' lunches?

The Environment of the School

1. Is the ground well drained?
2. Is refuse hauled away as fast as it collects?
3. Is it thoroughly understood at your school that all refuse furnishes breeding places for flies?
4. Would fly screens be beneficial?
5. Is the air in the neighborhood of the school clean and free from an excess of gases, dust, and smoke?

HEALTH OF SCHOOL PUPILS

PART I (To be filled out by pupil)

- Name of pupil.....
1. Can you easily read from your seat what is written on the blackboard?.....
 2. Have you ever been to a dentist?.....
 3. Have you been to a dentist within the last year?.....
 4. Have you had toothache within the last two months?.....
 5. Did you brush your teeth this morning?.....
 6. Do your ears ever run?.....
 7. Have you had earache within the last two months?.....
 8. Have you ever been vaccinated?..... When?.....
 9. When did you last take a bath?.....
 10. Have you had headache within the last two months?.....
 11. Was your bedroom window open as you slept last night?.....
 12. Do you eat breakfast every morning?.....
 13. Name the things you ate for breakfast this morning.....
 14. Do you eat a meal at noon every day?.....

PART II (To be filled out by the teacher)

1. Does this pupil have frequent or chronic difficulty in breathing through the nose?.....
 2. Does this pupil stutter or stammer?.....
 3. Is this pupil frequently ill?.....
 4. Does this pupil appear to be well nourished?.....
 5. Does the pupil look healthy?.....
 6. Has the pupil cleanly habits?.....
 7. Is the pupil's head clean?.....
 8. Have you detected any vermin?.....
 9. Is the pupil's tongue usually coated?.....
 10. Is the pupil noticeably lacking in play activity?.....
 11. Does this pupil wear glasses?.....
 12. Does the pupil show any symptoms of eye defects (redness or watering of the eyes, squinting, frowning, cross eyes, holding book too near, miscalling well-known words, and the like)?.....
 13. Has this pupil good teeth?.....
- Name of teacher.....

Health survey of school children. — The above adaptation of a health survey of the children of a classroom follows the suggestions made by Hoag and Terman in "Health Work in the Schools."¹ If used by teachers two or three times each year at intervals of about three months, many items would provide a means for measuring progress in the health program.

Self-survey by children. — Children can also be taught to participate in a self-survey of their own habits and thus to judge their conformance to standards of hygienic living by using a score card for hygienic living. A splendid type of such a score card has been used in some schools. Pupils should be asked to frequently check their living on such a score card and to compare scores from time to time in order to see what improvement has taken place. This practice offers a continuous lesson in hygiene.

The first step in the health program of any school is the acknowledgment that the preservation and improvement of the health of children is an educational function. Any school policy ignoring this principle may be considered archaic and undemocratic. In order that each child may avail himself of the opportunities that exist for his own advancement and the advancement of the society in which he lives, he must be taught the rules of hygienic living. Society should not be permitted to suffer because of his ignorance. Nor should society be deprived of his services because his parents are financially unable to make his body strong and efficient.

¹ Health Work in the Schools, Hoag and Terman, Houghton Mifflin Company, 1914.

SCORE CARD FOR HYGIENIC LIVING

USED BY SCHOOL CHILDREN

	ITEM	HIGHEST POSSIBLE SCORE IN EACH ITEM	MY SCORE ON DATE		
1.	Sleeping in the open, or with all bedroom windows wide open (screened in warm weather) . . .	10			
2.	Mattress (no feathers)	1			
3.	Small pillow	1			
4.	Bed clothing aired	1			
5.	Rise regularly at 7 or earlier	2			
6.	Light exercise on rising (five minutes)	2			
7.	Cold bath, unless ill	3			
8.	Hair brushed twenty-five times or more	2			
9.	Teeth cleaned at least morning and night	5			
10.	Individual towel	2			
11.	Glass of water on rising	1			
12.	Hygienic breakfast — thorough chewing	2			
	At least one item from each of three classes of food. Class one: fruit. Class two: bread, cereal, baked potatoes. Class three: eggs, bacon, milk, fish, cheese . .	3			
13.	No candy or other food between meals	4			
14.	No active exercise for twenty minutes after a hearty meal	3			
15.	Carry books at arm's length and change hands often	1			
16.	Get best possible light at school . .	2			
17.	Use fully twenty minutes for lunch. (Not five minutes eat and forty run)	3			
18.	Hygienic lunch — thorough chewing At least one item from two classes. Class one: bread and butter, crackers. Class two: milk, soup, cold meat	2			
19.	Two glasses of water in afternoon .	3			
		2			

SCORE CARD FOR HYGIENIC LIVING—*Continued*

	ITEM	HIGHEST POSSIBLE SCORE IN EACH ITEM	MY SCORE ON DATE		
20.	Vigorous exercise (baseball, running, etc.) thirty minutes	5			
21.	Rest twenty minutes before dinner	1			
22.	Hygienic dinner	10			
	Attractive table, 1; chew well, 2; eat moderately, 2; at least one item from three classes, 5: Class one: potatoes, bread, macaroni, rice. Class two: soup, stew, roast, baked beans, cheese. Class three: fruit, vegetables	2			
23.	Study two hours ¹ (read if lessons are easy)	2			
24.	Light behind, above, and sufficient when studying	2			
25.	Light exercise before retiring	2			
26.	Retire regularly before 10 P.M.	10			
27.	Glass of water before retiring	2			
28.	Clean hands, face, and mouth before retiring	2			
29.	Hygienic clothing	2			
30.	Correct posture	3			
31.	Hands and finger nails kept clean	3			
32.	All meals at regular times (not to vary more than one hour)	2			
		100			

Use of coffee or tea deduct 2 per cent.

Use of alcohol or tobacco deduct 20 per cent.

QUESTIONS

1. What are the defects in the medical inspection plan in operation in your school? Outline a plan for improvement with the aid of your principal and fellow teachers. Have your principal submit this plan to the superintendent of schools.

¹ Time depends upon the grade which child is attending.

2. Interest your children sufficiently in the care and sanitation of your school building so that they will make periodic reports on the condition of the building.

3. Do you know what percentage of the children of your class is immune from measles? Make a susceptibility chart for contagious disease including all the children of your class.

4. Are you conforming to the rules for isolation and exclusion from school which are laid down by your State Department of Health in reference to contagious disease?

5. Have you found it possible to discover whether lack of nourishing food or of clean, warm clothing is a handicap to the intellectual growth of any child in your class?

6. Are you coöperating with your principal and colleagues in providing a cheerful, homelike lunchroom for children who find it necessary to bring lunches?

7. Has it occurred to you that the domestic science girls might plan the food for a week's school lunches? When mimeographed and taken home, such plans may be of great assistance to parents.

8. How many of the children of your class have not visited the dentist during the past six months? How many have never visited a dentist? What plan are you organizing that will make it possible for all children to get dental treatment?

9. Are there any bad cases of adenoids among the children of your grade? Have the parents been notified by the nurse of the treatment needed? What is the minimum cost of such an operation?

10. Determine the percentage of children of your grade who have made normal gains in weight during the past three months. Ascertain as far as possible the reasons why some children have failed to gain. Can the school improve the situation for these children?

11. Study the before-and-after-school activities of your class group. Determine from tactful questioning of the children the games and occupations in which they engage. Teach the children healthful games¹ suitable to their ages through correlation with the English composition work.

¹ For various kinds of games, see Bulletin on Physical Education, Department of Public Instruction, State of Indiana, 1918.

12. In coöperation with the children of your grade determine upon a Student's Health Creed embodying ten or fifteen principles. An example of such a principle follows: "I will get all the fresh air I can and will open wide my bedroom windows when I go to bed."

13. Dr. Young of the Maine State Board of Health states that books printed from type smaller than "long primer" should never be put into the hands of pupils of any grade, and those for young children should be printed from "pica" or "great primer." With his scale as given below, determine the suitability of the texts you are using.

PEARL, as the printers call it, is unfit for any eyes, yet the piles of Bibles and Testaments annually printed in it tempt eyes to destruction.

AGATE is the type in which a boy, to the writer's knowledge, undertook to read the Bible through. His outraged eyes broke down with asthenopia before he went far and could be used but little for school work for the next two years.

NONPAREIL is used in some papers and magazines for children, but, to spare the eyes, all such should, and do, go on the list of forbidden reading matter in those homes where the danger of such print is understood.

MINION is read by the healthy, normal young eye without appreciable difficulty, but even to the sound eye the danger of strain is so great that all books and magazines for children printed from it should be banished from the home and school.

BREVIER is much used in newspapers, but is too small for magazines or books for young folks.

BOURGEOIS is much used in magazines, but should be used in only those school books to which a brief reference is made.

LONG PRIMER is suitable for school readers for the higher and intermediate grades, and for textbooks generally.

SMALL PICA is a still more luxurious type.

PICA is a good type for books for small children.

GREAT PRIMER should be used for the first reading book.

14. If provisions for a teacher's rest room have not been made in your building, study the possibilities of your building and outline a plan with the assistance of your fellow teachers for the incorporation of such a room. Ask your superintendent to present the suggested plan to the Board of Education.

REFERENCES FOR READING

Ayres, Williams, and Wood, Healthful Schools.
Dresslar, School Hygiene.
Hoag and Terman, Health Work in the Schools.
Rapeer, School Health Administration.
Terman, The Teacher's Health.

CHAPTER XII

RECORDS AND REPORTS

A **SYSTEM** of records and reports essential for efficiency. — The United States Selective Service System of supplying recruits for overseas service in the World War was a success. Our democratic society united enthusiastically in making this organization efficient. Out of the coöperation and unity of purpose which prevailed grew a system of recording and reporting facts and figures, the collection and interpretation of which were of incalculable value in the creation of the magnificent army which the United States put into the field. By a most carefully projected system of records and reports the machinery of this undertaking was kept working at top speed during the duration of the war. Every card, every printed form, every tabulation produced, made its contribution to winning the war. Dead wood and unimportant materials were discarded without hesitation, but no amount of work and no amount of record keeping were considered too great when their importance and vital nature were apparent.

Compulsory education and compulsory attendance. — The idea of compulsory service involved in the selection of men of all ages for military service is also fundamental in our democratic scheme of education. It will be admitted that the theory underlying compulsory education and com-

pulsory attendance carries with it two fundamental ideas. The altruistic idea of a proper educational and vocational equipment for the individual is coupled with the necessary principle of safeguarding and uplifting the state by the most economical conservation of the intellectual resources of the state.

The conservation and development of the intellectual resources of a state can be secured only by means of an equally well-planned system of recording and reporting concerning those age groups of the entire population which are affected by the compulsory attendance and education laws. These laws may be styled the "peace draft laws." Unfortunately the very severe criticism can be made of our public school organization that over a period of many decades no such all-inclusive, far-reaching, and highly systematic plan of selection, control, and segregation of school children had been initiated as was developed by the military authorities in an incredibly short time when other age groups were affected.

Public school records should include all children.—The obligation of public school authorities in the education of all children of school age is by law clearly defined. In 1917 all but one state in the Union had enacted compulsory education laws fixing the age limits for the attendance of children in school. These age limits varied from eight to twelve years in one state to seven to sixteen years in several states, with special provisions or exemptions in the latter cases for children between the ages of fourteen and sixteen. In the large majority of states, boards of education or equivalent bodies are charged with the selection of truant officers, and thus directly with the enforcement of the

school attendance law. It is presumably the intention of the law, in all cases where it is not otherwise specified, to hold boards and officers charged with the enforcement of these laws responsible for the attendance at school during the legal age limits of all children residing within the respective communities, regardless of the type of school which they may attend or may prefer to attend. In other words, educational or other authorities obligated to enforce the laws are concerned with the school attendance of all children, whether attending public, private, or parochial schools, or having instruction in the home. Authorities responsible for the enforcement of the compulsory education law are therefore required to think of the problem as involving all the children of our communities who are of school age. When the difficulties encountered in solving this problem are honestly faced, it becomes apparent that not only must children of the compulsory school age be included, but all children from birth to a period beyond the compulsory age. By this plan only will the state not be deprived through the ignorance or willful opposition of any one individual of any part of its rightful annual dividends expressed in increments of ability to do or think or act made possible by the education offered.

Uniform records and reports.—With the growth of the profession of education and the demand which the public has made for complete information concerning its schools, adequate pupil-record and pupil-accounting systems have become a fixture in many school systems. The records of individual communities have been amplified to the degree that will permit of complete sociological, psychological, and physical information concerning each

child. A system of records and reports which will cement an entire state and even the nation in its educational undertakings and will bring about equalization of opportunity in education for all children has been recognized as one of the greatest needs. If the people of a state are to know their educational shortcomings, it is necessary to present data which will show true situations, not of local communities alone, but of the state as a whole. Before the entrance of the United States into the Great War the tendency in our local communities and local school systems was to think of local problems only. The nationalization of our purposes and the unification of our ideals have made this no longer possible. The results obtained from the measurement of intelligence of the recruits sent to army cantonments are powerful agencies that will force the planning of educational policies along broader lines, both geographical and financial. It remains to be pointed out that, in the last analysis, any scheme of educational records and reports is dependent upon the willingness of the individual classroom teacher to coöperate, his desire to profit by the interpretations made and conclusions reached, and his efforts to surpass on the succeeding report any past achievement.

Records essential to the adequate enforcement of laws. —

A proper system of records and reports will instill respect for our state laws. It will be much to the advantage of our nation to foster a spirit which will insist on the careful enforcement of the laws on our statute books and the elimination of laws which do not permit of proper enforcement. An acceptable system of records and reports may tend toward national uniformity in matters of fundamental

importance. The need for adequate and uniform school census records becomes apparent when it is pointed out that at least twenty-seven different age spans have been utilized since 1900 in securing school census data in the various cities of the United States.¹ The age spans have varied from 7-14 years of age, including only seven years of population, to 5-21 years of age, including sixteen years of population.

Public opinion influenced by the reporting of facts. — Upon the accuracy of school census figures depend many items of major importance in school administration. If school authorities are lax about taking their census and checking returns from year to year, children will become indifferent to the requirements of the law. If accuracy in school census figures is insisted upon, children will find it difficult to oppose public opinion which will form for the enforcement of the statute. When it became necessary to request American citizens during September, 1918, to refrain from the use of pleasure cars on Sundays that sufficient gasoline might be saved to better provide for military needs, the force of public opinion so operated as to reduce to a minimum the violations of the request. On those Sunday afternoons at three o'clock, the section of Riverside Drive, city of New York, immediately in front of Grant's Tomb, at which time hundreds of cars are usually passing, was as free from automobile traffic as the auto-barred roads of Nantucket Island. Public opinion molded with respect to the enforcement of compulsory education laws and school census needs should operate with equal

¹ See annual reports of the U. S. Commissioner of Education, Bureau of Education, Washington, D. C.

surety and provide as wonderful a demonstration of loyalty and conformity to state requirements.¹

Adequate records may increase school receipts. — Adequately kept school census records will increase the amount of state funds that become available for local educational purposes. The School Survey Committee² which surveyed the schools of Cleveland found that the city school system because of loose school census methods had failed to collect during a six years' period \$150,000 which were due it from the state treasury. The Survey Committee³ which surveyed the St. Paul school system in 1917 pointed out that many dollars were being lost to the city treasury from the same source for a similar laxity. When it is considered that these amounts may well have been transmuted into much-needed increments to teachers' salaries, it becomes clear why teachers should feel a vital interest in this one form of school record.

Accuracy in school census brings good educational results. — It may be pointed out that accuracy in this one element of school record keeping has important bearing on many other phases of school development such as:

¹ In New York city when an adequate school census reporting system was installed, it was found necessary to provide schoolhousing for an additional 26,000 children. In Detroit, 8660 more children were added to the school enrollment through the adoption of a census record system from which the leaks were eliminated. In many other communities similar proportions of school enrollment will be found which should have been availing themselves of the opportunities the state affords for educational advancement.

² Cleveland School Survey, volume entitled "Child Accounting in the Public Schools," L. P. Ayres, 1915, p. 14.

³ St. Paul School Survey, Dept. of Ed., St. Paul, Minn., 1917, p. 38.

1. The reduction of retardation due to late entrance into school.

2. The elimination of indifference on the part of school children fostered by the hope of an early evasion of the law.

3. The diminution of early withdrawals as occur when age records are not properly kept and duly authenticated.

4. The combating of the industrial exploitation of children by unwise parents.

5. The creation of a minimum of class disorganization due to late entrance.

6. The lightening of teacher burdens which are otherwise greatly increased when the above-mentioned conditions prevail.

Advantages gained from other kinds of school records.

— It has been shown that proper census records are invaluable in well-organized school systems. It has been pointed out that the advantages that accrue from proper organization are distributed among pupils, teachers, and school executives. In no less degree is this true of proper recording of attendance, of the measures of the intelligence of children, of individual and class achievements, of failures in grade, school, or subject, of promotions and non-promotions, and many other vital elements of school progress. Schools will no longer build their reputations on the basis of the judgment of teachers alone, but in the future must depend upon facts quantitatively presented to establish their claims to preëminence or successful accomplishment. The teaching staff will frequently be required to justify the course of study which it has laid down in terms of subject failures, standards achieved, or

the actual progress made by its pupils expressed in acceptable quantitative measures. The insufficient and unscientific records of the past will no longer suffice in the eyes of a people who will place all of their hopes for a splendid future for democracy upon the advancement, achievements, and completeness of its schools.

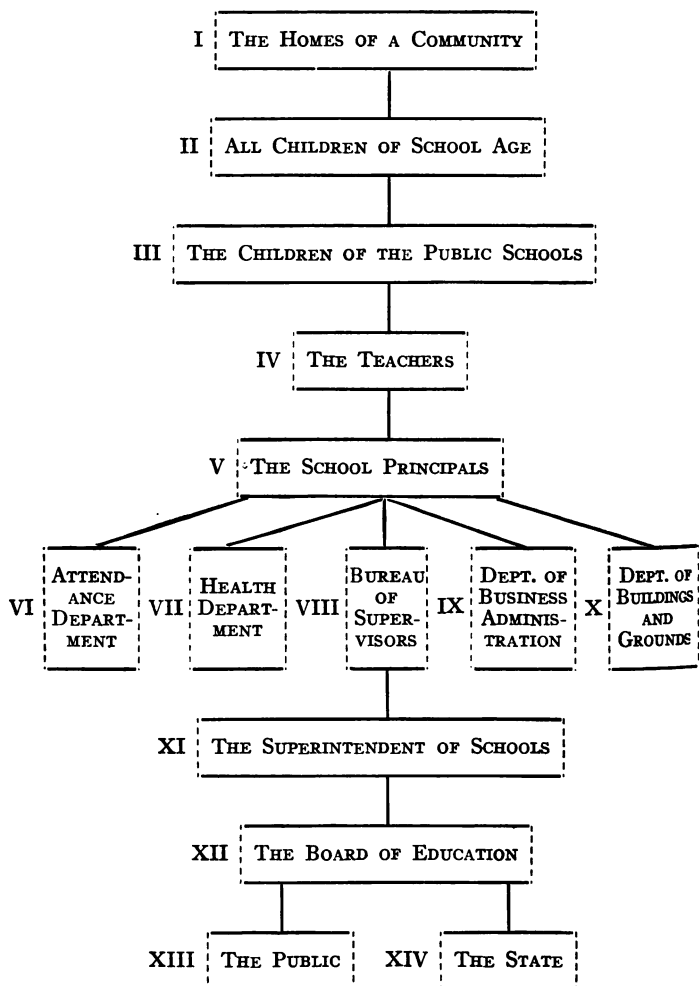
Helping the teacher. — The classroom teacher will be inclined to look askance at participation in any record-making or report-keeping which necessitates any deduction from his teaching or leisure time. It is conceivable that less time spent in actual teaching and more time spent in analysis or diagnosis to the end that the real needs of children may be met will produce more satisfying results in the course of a year. A teacher may with justice resent the loss of time involved in gathering fundamental data for records which are never utilized or never interpreted in their final form to him so that his teaching may be altered accordingly. All data collected by teachers should be reported back to them in such form and in such manner as to secure the more acceptable results or to modify the conditions surrounding the teachers' work when the first opportunity presents itself. Where studies involving school marks are made and the teacher is not afforded the opportunity of comparing his own situation with the whole school situation, or where studies of failures are made and the data from all possible situations are not brought in for study, comparison, and enlightenment, the labor involved in the computation may be considered to have been of little avail.

The constant use of records. — Frequently teachers are asked to participate in the collection of data only in a minor capacity. They dismiss the subject from mind

when their part is done. It is a wise teacher who will acquire for himself the knowledge that may accrue from any tabulations which may form a part of the local professional equipment in education. A record which involves the measurement of heights of blackboards from the floor in a school system and comparison with the standards set up for various grades becomes of great value when it is utilized by the local teaching staff when new buildings are being planned or additions being made. The knowledge of the actual playground situation in a city school system expressed in terms of the number of square feet of playground area available for each child of capacity enrollment becomes an instrument of good when frequently utilized as a reason for changes to be made.

Teacher coöperation essential. — Teachers may thus be made to realize that any additional equipment which they may obtain along the line of knowledge of actual conditions prevailing in their school system makes of them more helpful agents for the better development of the entire system. The conception of records and reports which made them undesirable elements of a teacher's life must give way to the acceptance of all usable records and reports with a desire for intelligent interpretation and with willing acknowledgment of error or possibility of improvement on conditions shown. Teachers recognize the great need of regularly submitted reports to parents covering the progress made by individual children. The reasons that exist for this means of establishing between parent and teacher a common understanding regarding the abilities and achievements of pupils exist in far greater degree in creating a common knowledge between state and community con-

FIGURE VIII



cerning the achievements and possibilities of such communities. The teacher will always remain one of the important factors in bringing to light the true situation that exists in any school system. No reorganization or reconstruction can result after the real nature of the difficulties involved in a school system are known without the utmost of coöperation from the classroom teacher. The tendency which has prevailed among teachers of accepting without question courses of study and methods of teaching and applying them en masse will not stand criticism in the light of our present-day knowledge of individual differences and individual needs. The professionally minded teacher teaches only after having assembled all group and individual data that have bearing on his class, grade, and school, so that his work may proceed with a minimum of friction and a maximum of intelligence.

The essential records of a school system. — Figure VIII shows the parts of the organization which must be welded together by a record and report plan. The figure shows that the initial facts of child accounting must be secured from the homes of the community and that the record plan does not function completely until the State has been informed of the conditions that prevail. Some of the pupil records and reports that are vital to the success of a modern school organization are listed below. Only those which have a most immediate bearing upon classroom problems are given. The complete list of the records and reports used in large school systems presents a formidable array even with non-essentials eliminated. The possibility of standardization of this brief list of records is shown in the paragraphs which follow.

1. The Enumerating Sheet for Recording School Census.
2. Individual Child's Permanent Census Card.
3. Elementary Pupil's Registration Card.
4. Permanent Office Record Card.
 - (a) For Elementary School
and
 - (b) For Secondary School
or
 - (c) For Elementary and Secondary School Combined.
5. Admission, Discharge, and Promotion Card.
6. Transfer Card.
7. Transfer Report.
8. Superintendent's Record of Individual Pupils.
9. Elementary Attendance Scholarship and Achievement Records.
10. Physical Record.
11. Pupil's Monthly Report Card.

Recording the school census. — The Enumerating Sheet for Recording School Census Data is the means for securing from the homes of a community all of the data that are necessary in order that a school system may assure itself that the children of the compulsory school ages are being properly provided for. Such an Enumerating Sheet should record for each child its full name, its date of birth, its sex, the birthplace of the child and of the father, the names of the father and mother, the residence, the school which the child attends, as well as all facts of employment if the child is not attending school and is employed. If the child happens to be defective and is not attending school for that reason, this fact should also be shown.

It is quite necessary in securing the date of birth or the age of a child from parents or other advisers in the home that some authentic documentary evidence of the date of birth of the child be seen and the fact be duly recorded on the Enumerating Sheet.

An acceptable type of enumerating sheet may be seen on the pages just preceding. The names of children are recorded in the order in which the information is received in the house-to-house canvass. Only enumerators who are accurate and highly interested in educational progress should be encouraged or permitted to undertake this extremely important work of enumeration. When the information asked for on this sheet has been correctly reported and placed at the disposal of teachers, it will relieve them of many cares which might otherwise fall to their lot.

A permanent continuing census record for each pupil. — During the school life of a child fifteen of these enumerating sheets would contain the consecutive years' census information regarding him. This will not permit of proper consideration of any single case because of the difficulty involved in handling the sheets.

Only when the facts thus obtained through the Enumerating Sheet are properly recorded on a Permanent School Census Card, which is so arranged as to permit of a permanent census record of every child for the entire period of his life during which he is amenable to school census control, will a school system be assured that every child is complying every year with state regulations. Only by following such a plan can retardation due to absence from school or late entrance be reduced to a minimum and teachers relieved of many of their disciplinary problems resulting

when an inadequate census system causes the admission to classes of children who have heretofore failed to comply with the compulsory school law and are therefore very much in arrears in their work and much over-age for the groups in which they are placed.

In the large majority of our American cities where varying percentages of all children of school age are attending parochial and private schools, the Permanent School Census Card, as shown on page 288, will provide an adequate method of checking the attendance and school achievements of all children of school age. This census card may also be utilized for the purpose of discovering any inadequacy in the course of study, since the reasons for early withdrawals from school can be recorded here. It also permits of a record of employment of children on leaving school, and enables attendance officers to record their investigations of cases where employment certificates have been issued.

The Permanent School Census Card is kept on file in the office of the superintendent of schools, where the information it carries becomes available for the attendance officers, the school nurse, the medical inspector, and any other school officials. When properly maintained, this card will prevent the complete withdrawal from school contrary to law of children who use the transfer between public and non-public schools as a subterfuge or means for evasion.

Registration Card. — The immediate connection which the teacher makes with the home in the case of all children attending the public schools is through a Registration Card, which requires information concerning parentage, residence, vaccination, and previous school attendance

Record of Employment on Leaving School

Desires Employment as

[illegible][illegible]

(One card should be kept for every child living in the city.)

To be filed in the office of the superintendent

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[illegible]

*Include public, private, parochial or evening schools here.

that will be needed for the permanent school record of the child. The school system which requires that proper documentary evidence of the date of birth of a child be presented when the parent first sends to the school the Registration Card of any child will offset many difficulties involving the age of children, which will otherwise occur later. The teacher in this way is enabled to secure the correct age of the child for any age-grade or age-progress records that must be made in any later school year. When the child is ready to leave school, no question of doubt regarding age arises when a proper record has been made of the date of birth and furthermore can be substantiated by reference to an authentic document which had been presented early in the school life of the child. It is quite clear that when the child has once presented his Registration Card the need for annual registration and for repeated requests from parents for information which has once been given will be eliminated, providing the proper transfer is made of registration information to a permanent Office Record Card.

Office record of individual pupils. — The Office Record of any pupil provides for uniform and sufficiently detailed information covering the period of attendance at the school where the record is filed. No school should fail to possess a permanent record of this nature of every child who has been in attendance in its classroom even for a brief period. Where a child had during his school life attended five different schools, there should be in existence one Office Record Card, in each of these schools as evidence of the relationship of the child to each school and of the work he has done in each of them. The information on the Office

102B		1. Last name		2. First name and initial		OFFICE RECORD	
THIS CARD IS NOT TO BE TAKEN FROM THE PRINCIPAL'S OFFICE.							
3. Place of birth		4. Yr. <u> </u> Mo. <u> </u> Da. <u> </u>	5. Vaccination <u> </u>		THE UTMOST CARE SHOULD BE USED IN RECORDING NAMES AND DATES. AVOID ABBREVIATIONS. WRITE ALL DATES IN THE FOLLOWING MANNER: 1912-9-23.		
6. Name of parent or guardian		7. Occupation of parent or guardian <u> </u>				* CODE: DATE OF BIRTH: 1. BIRTH CERTIFICATE; 2. BAPTISMAL CERTIFICATE; 3. PASSPORT; 4. BIBLE RECORD; 5. PARENT'S STATEMENT; 6. CHILD'S STATEMENT.	
8. Place of residence before entering this school							
a. School last attended		d. Grade last attended <u> </u>		8. Latest place of residence, including residence outside of the district when pupil is transferred.			
9. Date of discharge		10. Age when discharged		11. Grad. class of			
YEARS		MONTHS					
Left school to remain at home <u> </u>							
Permanent illness <u> </u>							
Commitment to <u> </u>							
To work at <u> </u> Salary <u> </u>							
Transfer to <u> </u> (Check reason for withdrawal <u> </u>)							

[illegible][illegible]

Record Card, which should be transferred to the next school which the child attends, is best carried by means of a transfer card and the Admission, Discharge, and Promotion Card.

High school office record card. — The Office Record Card may provide proper recording space for merely the elementary school career of the pupil. In such cases a High School Office Record Card, which, as far as the differences in schools permit, has the same form and carries the same subject matter as required for the elementary school, will be utilized for children who enter the higher institution.

In schools where both the elementary and secondary branches are taught in the same building, a combination elementary and secondary office record card is most desirable.

Admission, discharge, and promotion card. — The Office Record Cards should remain in the principal's office and should always be the property of the school in which they were first made. In order that the information given on the Office Record Card may be transferred with the child from class to class, or from school to school, as long as he is a member of a school system, or even transferred to other school systems when the child changes his residence to another city or community, an Admission, Discharge, and Promotion Card is necessary. This card is all that its name implies. The classroom teacher in admitting a pupil to his class will find it advantageous to have the child's previous record presented as the form provides. The child utilizes this card when he is promoted from grade to grade and may also be permitted to retain it when he is

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[illegible]

leaving school permanently, for it provides a form of record which he may use advantageously with his future employers. The Admission, Discharge, and Promotion Card thus remains with the pupil in his progress through school. The advantage of this plan in providing each classroom teacher with the information which is needed for the best interpretation of the needs of all children in his charge will be evident to the progressive teacher.

Transfer Card and Transfer Report.—When children indicate to a principal or teacher in one school that it is their intention to change schools because the family has moved, or for any other permissible reason, the Admission, Discharge, and Promotion Card, which is sent with the child, may not be delivered to any other school within the school system, or to any other school system, since the child may elect to violate the compulsory education law. It thus becomes necessary to utilize a Transfer Card of the type shown here, one copy of which is delivered to the principal of the school which the child has indicated that he intends to attend, while a second copy is delivered to the attendance department in order that that department may make a proper annotation of the change on the Permanent Census Record Card, and may also check the transfer, so that no child may have been deprived through his own desire or his parents' culpability of the education to which the law entitles him. With this Transfer Report the teacher has established the proper relationship between the attendance department and the child who needs supervision in that direction.

The superintendent's record of the individual child.—
The plan as outlined above for providing complete records

in every school building of all children who have been enrolled at any time in those schools may fail at times because of the destruction of records by fire or because of loss from other causes. The preservation of a duplicate card in the office of the superintendent of schools of all office record cards in individual school buildings will prevent the complete loss of records at any time. This Superintendent's Record, as it may be called, will require the addition of data from year to year as such additions are made by the various school principals. The centralization of all records will also reduce the number of telephone calls and will permit a more intelligent action toward children whose cases for any reason are reviewed in the central office.

Attendance, scholarship, and achievement record. — The record cards which have been discussed thus far bear concentrated information assembled by year periods for each child in such fields as attendance, health, conduct, and scholarship. Accuracy will not be sufficiently characteristic of such records unless a proper and uniform plan of assembling the initial data is arranged. The success of such a plan will depend upon its simplicity and the degree of condensation. One record sheet for each pupil, on which may be entered from day to day and month to month the details of attendance, the ratings for conduct and classroom subjects, and the achievements as recorded from the use of standard tests and scales, will be most acceptable to the majority of classroom teachers. The elementary attendance, scholarship, and achievement record blank reproduced in obverse and reverse on pages 291 and 292 presents a maximum of the desired characteristics.

122		Elementary School Record		THE UTMOST CARE SHOULD BE USED IN RECORDING NAMES AND DATES, IN THE FOLLOWING MANNER: 1919-9-23.		AVOID ABBREVIATIONS. WRITE ALL DATES IN THE FOLLOWING MANNER: 1919-9-23.													
1. Last name		2. First name and initial		b DATE OF ADMISSION		c Age Sept. 1 Yrs. Mos.		d Grade		e Room		f Days present		g Health		h Conduct		i Scholarship	
3. Place of birth		4. Yr.	Mo.	Da.	5. Year of vaccination														
6. Name of parent or guardian		7. Occupation of parent or guardian																	
8. Place of residence before entering this school		a. School last attended																	
4. Grade last attended	9. Date of discharge	10. Age when discharged		11. Graduated in the class of															
Left school to remain at home		Years		Months															
Permanent illness		8. Latest place of residence, including residence outside of the district when pupil is transferred.																	
Commitment to																			
To work at																			
Transfer to		Salary																	
		(Check reason for withdrawal)																	
		* CODE: DATE OF BIRTH: 1. BIRTH CERTIFICATE; 2. BAPTISMAL CERTIFICATE; 3. STATEMENT OF PARENTS; 4. STATEMENT OF CHILD'S STATEMENT.																	

In the space below may be recorded: (1) cases of truancy; (2) cases of corporal punishment; (3) reasons for non-promotion; (4) other matters worthy of record, such as serious illness or pronounced characteristics likely to affect success.

This card is not to be taken from the principal's office High School Record

1. Last name		2. First name and initial		3. Residence of parent or guardian (Use pencil)		4. Residence of student (Use pencil)		Subjects— Year 19 -19		Class	Exam.	Date	Credits— L. S.	Subjects— Year 19 -19	Class	Exam.	Date	Credits— L. S.
Telephone no. (Use pencil)				6. Course taken		7. Class												
8. Year	Grade	Age Sept. 1 Yrs. Mos.	Days present	Days absent	Times tardy	Reasons for irreg- ular att.	Total credits earned											
19 -19																		
19 -19																		
19 -19																		
19 -19																		
19 -19																		
9. Date of discharge		10. Graduation Date		Honors		11. Higher institution entered												
12. Reason for withdrawal before graduation. Check in square below.																		
<input type="checkbox"/> To work (Employer and employment) Weekly wage <input type="checkbox"/> To remain at home (Reason) <input type="checkbox"/> Death (Cause) <input type="checkbox"/> Permanent illness (Nature) <input type="checkbox"/> Transfer to (Name of school) <input type="checkbox"/> Other reason																		

*D—Debate; S—School paper; A—Ath. assoc.; B—Basketball; F—Football; Ba—Baseball; C—Chess; G—Golf; H—Hockey; I—Inter-school; J—Judo; K—Kendo; L—Lacrosse; M—Music; N—Navy; O—Other; P—Physical education; R—Reading; S—State; T—Tennis; U—Unknown; V—Volleyball; W—Wrestling; X—X-ray; Y—Yacht; Z—Zoo.

Record subjects as follows: "Eng. 1 B" or "Amer. Hist. 4 A," dates as 6/24.

11—Local credits; counts or points; S—State credits.

Elementary Attendance and Scholarship Record School Year 191__191__

Pupil's Last Name		First Name and Initial		Residence	
First School _____ Date of Admission _____ Date of Transfer _____		Second School _____ Date of Admission _____ Date of Transfer _____		Third School _____ Date of Admission _____ Date of Transfer _____	
Fourth School _____ Date of Admission _____ Date of Transfer _____					

DATE	SYMBOLS												A. M.		P. M.		A. M.		P. M.		A. M.		P. M.				
	1	2	3	4	5	6	7	8	9	10	11	12	Dr. T.—Dropped	Temporarily	Dr. P.—Dropped	Permanent	Truant	Dismissed	Tardy	Dismissed	Tardy	Dismissed					
Sept.																											
Oct.																											
Nov.																											
Dec.																											
Jan.																											
Feb.																											
Mar.																											
Apr.																											
May																											
June																											
1st Semester—Days present _____ Days absent _____													2d Semester—Days present _____ Days absent _____													Total _____	

Scale of Ranking A=90% to 100% or Excellent B=75% to 89% or Good C=60% to 74% Fair or Passable D=40% to 59% Unsatisfactory F=Less than 40% or Very Poor	Conduct	Effort	Personal Appearance	Reading	Language	Spelling	Geography	History	Civics	Arithmetic	Writing	Drawing	Music	Physical Culture	Science	Hygiene	Manual Training	Sewing	Cooking	
	C.	Eff.	P.A.	R.	L.	S.	G.	H.	CL	A.	W.	D.	M.	P.C.	Sc.	Hy.	M.T.	Se.	Co.	
Sept.																				
Oct.																				
Nov.																				
Dec.																				
Jan.																				
Examinations																				
Feb.																				
Mar.																				
Apr.																				
May																				
June																				
Examinations																				
Final Mark																				

SUBJECTS: 1. This sheet should contain the attendance and indicate the extent of a pupil for an entire year, and it is to be sent from building to building or room to room when the pupil transfers from one building to another after it is known that the pupil has entered the other school.

2. In case of temporary absence the pupil should be marked absent for six consecutive half-days (or as few periods), and Dr. T. in case he does not return on the seventh half day, should be marked absent for the entire week. In case of Dr. T. under reason for dropping.

GRACE-CHURCHMAN SCHOOL, ROOMS 2001-2011-1, 2012-2013, N.Y.

Physical record cards. — The relationship between teacher and health department can best be maintained by a physical record of each child, which shows not only the results of the examination for each year of the child's school life, but also a complete personal history of disease, together with a record of advice given to parents and results obtained. Only the closest coöperation between school physician, school nurse, and teacher will bring about such changes in the physical condition of a child as to satisfy the board of education and the public for the time and money spent on this phase of school work. The information on these physical record cards should be available for each teacher in order to permit of the most intelligent treatment of each pupil's case. Teachers will readily perceive that a physical record card which gives information for a less period than the entire school life of the child has little merit in it. Any type of physical record card which permits merely the recording of defects found in children without giving a record of advice to parents with a subsequent follow-up to insure proper treatment and results may be considered as being a serious handicap in the organization of the school health division.

Dental records. — The importance of maintaining proper dental records for each child has not been sufficiently emphasized in our public schools. A dental card which carries a chart of the teeth, showing the extractions, cavities, and fillings, should supplement the physical record card. The school teacher who guides a child properly in the care of his teeth and assists in the preservation of partially decayed teeth through providing free clinical service where parents cannot afford proper attention earns

the lifelong gratitude of those benefited and tends to secure a maximum of coöperation from children in their work.

PUPIL'S REPORT CARD

4

LAST NAME _____ FIRST NAME AND INITIAL _____ SCHOOL _____

SCHOOL YEAR 1911-1912	GRADE AND CLERK	DAYS ABSENT	TIMES TARDY	CONDUCT	EFFORT	READING	LANGUAGE	SPELLING	GEOGRAPHY	HISTORY	CIVICS	ARITHMETIC	WRITING	DRAWING	MUSIC	PEL. CULTURE	SCIENCE	PHYSICS	MAN. TRAINING	GAMES	DANCE	MEANINGS OF MARKS "A" indicates Excellent, "B" Good, "C" Medium, "D" Inferior, "F" Failure
MONTH																						
September																						
October																						
November																						
December																						
January																						
February																						
March																						
April																						
May																						
June																						

** THE HOME AND THE SCHOOL SHOULD WORK TOGETHER FOR THE GOOD OF THE CHILD **

It is important that the teacher should be fully informed of the child's physical condition, life outside of school, and previous history. Parents are cordially invited to confer with the teacher or the principal.

First Semester—Promoted to Grade.....Class.....Teacher.....

Second Semester—Promoted to Grade.....Class.....Teacher.....

Reports to parents.— In order that complete understanding may prevail between home and school in regard to the status and needs of children the pupils' report card sent home at fixed intervals is commonly used. This may take the form shown here.

A form of report which is framed on the principle that parents should be informed of the relative position in the class group which their child holds is being utilized in the Horace Mann Elementary School of Teachers College. The report involves the two elements: (1) studies and (2) habits and attitudes desirable for good citizenship. It is here reproduced in condensed form. The reverse of the card carries a full explanation of the system of marking, while the lower section serves for parents' comments and is detachable for return to the classroom teacher.

Horace Mann Elementary School

1918-1919 Parents' Report _____ Quarter

Name _____ Grade _____ Room _____

I. Studies

1. Above average —
2. Below average —
3. That show particular improvement —
4. In which child apparently is not working to the best of his ability —

II. Habits and Attitudes Desirable for Good Citizenship

1. Which are unusually well developed —
2. Which need careful training —
3. In which improvement has been marked —

Number of Days in Quarter _____ Days Absent _____ Times Tardy _____

EXPLANATION

The word "average" is used to indicate the achievement in a given subject of the middle half of the class. "Above average" or "below average" indicates the achievement of the twenty-five per cent of the class that is above or below this middle group. Only the best and the worst points are mentioned, both in studies and in habits and attitudes.

The studies unchecked in the list below are those which your child is pursuing. No specific mention of a subject on the other side of this sheet implies that the work is average.

Reading	Arithmetic	Fine Arts
English	Science	Industrial Arts
History	Penmanship	Physical Education
Geography	Music	

Pupils whose work is average or above average in the essential school subjects will be ready for promotion to the next grade at the close of the year.

Principal.

(Cut here and return promptly to the teacher)

Parents' Comment: (Blank space here for that purpose)

Date _____ Signed _____

(Please return this promptly to the classroom teacher)

Other records and reports. — The successful management of a school or school system will, it is obvious, require many other types of records and reports than those which it has been possible to enumerate or discuss in this chapter. The aim of the supervisory and administrative officers should be to require the keeping of only those records and reports which will prove their right to existence in a betterment of the school system which they serve.

QUESTIONS

1. Why is it not possible and desirable to conduct a school without records?

2. What facts concerning each pupil of a class is it essential for you as a teacher to know when your class assembles for the first time in September? What kind of school records will give you the desired information?

3. Have the annual reports that are required from teachers in your school system any direct bearing upon the amount of money received by the school system from state sources?

4. When John Smith withdraws from your class to attend, according to his statement, the neighboring parochial school, what means do you employ to ascertain whether he has entered his new school or has dropped out of school entirely? As a representative of a state system of education, what responsibility rests with the teacher in this case?

5. Wherein lies the value for the teacher of a medical inspection record for each pupil? Is there any advantage in including, on one card, the record of all inspections during the school life of the child? It has been said that a "medical inspection record without the record of action taken in curing defects is valueless." What validity has this statement?

6. Enumerate reasons illustrating how a permanent and continuing school census may make easier the work of a classroom teacher.

7. It would be advantageous for a teacher who has taught for

a period of years to have records of his teaching career in such form as to be able to strike a balance. Are you finding it possible to record facts regarding your own problems and achievements for each school year so as to be able at any time to summarize results of your professional work?

8. Why is it more desirable to send to parents a monthly statement of their children's relative position in their class groups rather than definite figures on a percentile basis?

9. James Mason, 13 years old, and big for his age, is anxious to leave school although the law does not permit him to do so until he is fourteen. He moves with his family to a neighboring town, taking his Admission, Discharge, and Promotion Card with him. What records should be sent to the neighboring school superintendent to safeguard the interests of this boy and of the state?

10. Howard Ellison, a fifth grade pupil of No. 10 school, moves to the neighborhood of No. 15 school, which he now desires to attend. What disposition is to be made of Howard's Admission, Discharge, and Promotion Card? How is No. 15 School notified that Howard is to be expected as a new pupil? How is the attendance department to know that Howard may become a willful non-attendant? What record is left at No. 10 School of Howard's work while he attended there? What is the first record made in No. 15 School of Howard's admission?

11. What advantage accrues from the use of a loose-leaf elementary attendance and scholarship record in place of a bound class register which was formerly used by classroom teachers?

12. Jane Sullivan of 76 East St. has been reported ill with a serious contagious disease. You have knowledge that other children attending your school live in this same house. Show the advantages of using a Residence Card in locating such children. Is it your duty to report this case of contagion to a central school authority in order to prevent children from this address spreading this disease in the Intermediate School or Senior High School?

13. What arrangements prevail in your school which require that you report each term on such vital matters as (a) the number of children failing each subject during the semester; (b) the distribution

f attendance in your class in terms of the number of days each child as attended school; (c) the number of non-promotions; (d) the number of withdrawals from school; (e) the ages of the children of our class; (f) the nationalities and occupations of the fathers of the children in your class?

REFERENCES FOR READING

- Bennett, H. E., School Efficiency.
Chancellor, Class Teaching and Management.
Dutton, School Management.
Perry, The Management of a City School.
Strayer-Engelhardt, Elementary School Inventory Book.
Strayer-Engelhardt, School Record Series.

CHAPTER XIII

AUXILIARY EDUCATIONAL AGENCIES

CHILD participation in the real activities of life has not always been considered an integral part of his education. To learn facts from a textbook and to recite those facts to the teacher have appeared to be the reasons why children went to school. The school has been a world apart from real child life. The needs of the home and the community have not been recognized. The school has failed to perceive the educational values in the work of other community organizations. Emphasis has been placed upon the school arts as distinguished from the activities of child life.

Permanent additions to the school curriculum. — Previous to America's entry into the World War teachers may have found it possible to ignore in large measure the extra curriculum activities which were making demands upon school time. Such teachers have since felt the necessity for a complete change of attitude toward such activities. In June, 1917, the "Win the War" movement found over two hundred philanthropic, social, financial, and military organizations of national importance attempting to use the public school children for the achievement of their laudable aims. No adequate centralizing national educational department existed through which the validity of these appeals might have been determined. Each local school system made its own selection of campaigns to be

entered. Tremendous losses of energy, time, and money occurred from the duplication of efforts. Yet it was the mobilization of hundreds of thousands of school children that brought success in many of these wonderful campaigns. The resulting good effect upon the character, understanding, and future citizenship of these child participants cannot be disputed. The many opportunities for socialization, for democratic coöperation, and active participation in the work of a real citizen, which prevailed in war times, are not thrust so eagerly upon schools in times of peace. The most conservative teacher of the days before the World War finds himself to-day anxious to secure for the school child the privilege of a well-organized participation in those school branches which unfortunately have hitherto been called extra-curriculum activities. It is recognized that the membership privileges and responsibilities of the Junior Red Cross may tend to play as large a part in the preparation of a child for the duties of citizenship as the classroom work in drawing or geography. The future citizen, it is maintained, may also benefit fully as much, and in many instances more, from a thorough course in scoutcraft as he will from an equally exacting course in history or grammar. The teacher's attitude toward the extra-curriculum activities has become one of assimilation. The advantages that can be gained from scouting, school banks, musical clubs, Junior Red Cross, and the like must be made school assets. The expenditure by teachers of their time and energy will be amply offset by the real dividends of better and more intelligent citizens.

It is realized that the amount of pupil and school connection with community-building agencies must be limited.

The time available, the demands that should be made in teacher energy, the aims to be achieved, the permanent character of the project and its adaptability to school programs and courses of study are all elements which must be considered. A definite auxiliary program should be built for every school with these limiting factors in mind. This program may be as definite for each grade and each pupil as the subject programs developed in most schools. The probability of permanence is of vital importance. There may well be added to the American virtues those of solidarity and thoroughness. The child should be permitted to associate only with well-planned, well-organized, and substantial propositions.

Thrift and savings clubs. — The Thrift Stamp and War Savings Stamps campaigns among school children have established habits of saving and thrift which should continue to be encouraged. The United States Treasury Department, because of the success of its campaigns and the continuous need for thrift education among the people of the nation, has, since the war, continued its sale of Thrift Stamps. Active participation in this movement is possible for all but the youngest children of any school. A thoroughly organized system of reporting and recording the amounts purchased by children can be developed by committees from the upper grades. The chief responsibilities may be placed upon these children. A goal of attainment should be set for them and they should be held responsible for results. The participation in the management of such a campaign over a period of months will bring forth qualities of leadership hitherto unknown. The confidence gained may encourage some of these young

leaders to become the leaders in adult life in a few years' time.

Postal savings banks. — A definite school policy may be adopted toward postal savings and subsequent investment in government bonds which becomes possible through this channel. It should be made impossible for children to mature without learning of this depository for savings provided by the national government.

School savings banks. — The school savings bank is one of the most valuable auxiliary agencies which can be included in a school program. School savings banks need involve only a minimum requirement of pupils' and teachers' time. Where it is not deemed advisable to utilize school time for this work, the automatic school bank machine may be used to advantage. The custom of throwing the burden of collections and bookkeeping upon the representatives of local banking institutions or placing it in the hands of the banking department of the local high school has advantages. The child will, on the other hand, secure a maximum of return in self-assurance, knowledge of banking methods, and realization of importance of accuracy where he has contacts with the entire machinery of the transactions.

School saving causes the child to consider the earning value of money and to understand it as a comfort factor and a power for good. It is quite possible through school savings for each boy or girl in a school to have a bank account of from \$100 to \$400 at the time of graduation from the elementary school course.

"Going-to-College Clubs." — In conjunction with the school savings bank children may be taught to keep per-

sonal account books of their receipts and expenditures. Such records showing the earnings and savings of young people from an early age to the time of their maturity may not only develop thrift but will tend toward a study of relative values which will make stronger and better men and women. The elementary teacher may well point out to a fifth or sixth grade boy or girl the advantage of beginning at that period the planning and saving for a collegiate training. Beginning with fifth grade children the school may find it advantageous to plan Going-to-College Clubs, the chief purposes of which are to make children familiar with college expenses and with the attainable scholarship prizes which help to pay part of those expenses and to set as an aim the total savings at the end of the high school course of a sum varying from \$500 to \$1000 to be utilized toward college expenses.

Salvage clubs.—The salvage campaigns conducted in all schools during the war have encouraged other forms of conservation. Teachers will find it expedient to continue to foster Salvage or Conservation Clubs, with the chief aim of purchasing such equipment as victrolas, projectoscopes, encyclopedias and the like, of establishing scholarships, or of aiding financially in worthy enterprises. The work of such clubs may be highly correlated with the regular school program. The underlying educational and community values are universally acknowledged. Proper sanitation and proper storage must be considered in handling any salvaged material.¹

¹The following list of materials collected in the Los Angeles schools during war time indicates how formidable an array of discarded materials having money value can be assembled by such clubs:

The boy and girl scouts. — Dr. James E. Russell, Dean of Teachers College, Columbia University, has said of the Boy Scout movement: "I regard the scout movement as one of the most valuable educational agencies of this generation. One lesson of the European war is that American boys must be trained in patriotism and in those homely virtues which would make for civic order and social stability. For this purpose, I know of no means so effective as those employed by the Boy Scouts. I hope to see the time when every American schoolboy will look forward to becoming a good scout and will be trained to incorporate the ideas of the boy scout into his life as an American citizen.

"The movement is distinctly non-military, but it should appeal as much to the most ardent militarist as to the non-militarist. It is non-military in the same sense that manual training is non-vocational, or non-professional, but it is preparatory to good citizenship and every-day service. It furnishes physical training to the boy and accustoms him to outdoor life and camping. It gives him a purpose

Tin or lead foil folded flat (not in balls), collapsible paste and paint tubes, dental fillings, lead, brass, copper, iron and aluminum waste, old gold and silver and broken bits of jewelry, typewriter ribbon boxes and metal spools therein, carbon paper boxes, waste rubber, old automobile tires and inner tubes, bicycle tires, books, magazines, and newspapers (these must be folded once only and tied both ways with heavy string), burlap and gunny sacks, old kid gloves, clean white rags, mixed rags, woolen rags (separated), wafer tins, glass fruit jars, cold cream jars, men's shoes, bottles of all kinds rinsed clean, cork, stamps, castor beans, old clocks and watches, and hair combings. — Los Angeles City Schools and the War, Los Angeles, Cal., February, 1918, p. 35.

that is suited to his age and appeals to his boyish traits. It utilizes to good advantage the gang spirit. It is remarkably appealing in teaching him keen work and instills in him high ideals. This, in a sense, is more than military training ever can do, in that it develops character, initiative, and intelligence.

"Give me one million boy scouts grown into manhood and I will fear neither foreign domination nor internal social disorder. But we ought to have more than one million to fall back upon. We ought to have five millions of boy scouts in this country.

"This movement should receive the support of the schools throughout the country."

American teachers should profit by the powerful addition to their educational forces which they have secured in the Boy Scout movement. It is a wise superintendent of schools who will tie up this successful program of character building closely with his school system, even to the degree of making the chief scout executive a member of his educational staff. The Boy Scout Manual may even be introduced as a supplementary reader for sixth, seventh, and eighth grade classes.

The teacher who, even under favorable conditions, provides leadership for his boys and girls during only a period of five hours for a maximum of 200 days a year must welcome any movement which will guide those same boys and girls during the many other hours of activity of the 365 days of a year. The school cannot utilize in its traditional work all of the energies of boys and girls. These energies used and guided in the scout program of character development and good citizenship will manifest

themselves in the schoolroom in better health, greater efficiency, chivalry, loyalty, patriotism, and in the great joy of living a clean life. The improvement which teachers have found in the few scouts of their schools should be the privilege of all boys and girls.

The Junior Red Cross.— Out of a children's participation in the activities of the World War came a strong children's organization which performed such a meritorious service as to entitle it to permanent connection with our educational systems.

The Junior Red Cross answered the child's question, "What can I do to help win the war?" in such a way as to harmonize with the child's educational activities. In giving children the opportunity to render direct service to our fighting men and associates in the war through their school work in sewing, manual training, art, and cooking, the Junior Red Cross and other agencies created a powerful motive for better school work. The test of their natural eagerness to be real participants in world citizenship was found in the fact that in the year 1917-18 within ten months' time the Junior membership had grown from zero to 8,376,643.

These Junior Red Cross members turned in by the hundreds of thousands refugee garments, hospital garments and supplies, knitted articles and comfort kits, all made as a part of the regular school sewing course. In school workshops boys made Red Cross packing boxes, different articles of furniture for Red Cross convalescent houses, knitting needles, applicators, various pieces of workroom furniture, games, puzzles and numerous other miscellaneous articles. Cooking classes sent jams, jellies, and other

delicacies to local camps and hospitals. In 1918 more than three thousand pieces of furniture were made by the Juniors in school workshops for the Red Cross convalescent houses constructed in connection with the base and general hospitals in this country.

The American Red Cross in its mission of healing wounds and comforting the distressed has exerted a great influence in spreading throughout the world the spirit of unselfish service and lofty humanitarianism. The American Red Cross is permitted to render service where our government itself finds it impossible to act. This opportunity for altruistic service should not be lost for the children of this country. The country itself will profit to the degree that children find it possible to become absorbed in a project which has as its basis the relief of suffering and the betterment of the human race. Many schools had, previous to the war, engaged in more or less degree in activities akin to those of the Red Cross. Such activities continued under the banner of the Junior Red Cross, an organization connected with our schools, will bring before children for all time the need for their assistance in helping those less fortunate.

The educational program of the Junior Red Cross is explained in a teacher's manual issued from the American Red Cross Headquarters at Washington, D. C. Part I explains the Red Cross organization and the place the school auxiliary holds in it. Part II presents definite educational activities and the program of service. In showing how Junior Red Cross activities can motivate school work it gives graded composition outlines, graded lists of library books on patriotic subjects, suggests patriotic

programs and plays, and lists of games, slogans, poems, and songs, graded arithmetic lessons, Red Cross graphs, and suggestions for drawing and designs. Its section on education in health includes a general health program, first aid, and home care of the sick. Directions for managing bazaars, and salvage campaigns and detailed explanations showing how to make necessary Red Cross supplies are also included in the manual. These manuals are furnished without charge to teachers.¹

¹ The committee selected in 1918 by Superintendent Withers of the St. Louis public schools to report on the advisability of affiliation with the Junior Red Cross submitted the following:

"Cordially approving the declaration of President Wilson that the Junior Red Cross provides an opportunity for a 'Realization in public education of the new emphasis which the war has given to the ideals of democracy and the broader conceptions of national life,' this Committee submits that statement as an adequate expression of the nature and function of the Junior Red Cross, and offers the following suggestion:

"That the Superintendent of Instruction recommend to the Board of Education

"1. That the Junior Red Cross be officially recognized in the St. Louis Public Schools.

"2. That the Junior Red Cross be hereafter designated as the only medium through which activities requiring the coöperation of the schools with war-relief and other national and civic movements, not included in the prescribed courses of study, shall be carried on.

"3. That this organization in the schools may also serve as the agency for carrying on any other work that the Board of Education may initiate.

"4. That the Superintendent of Instruction constitute a Committee which, at his direction, shall act in an advisory or an executive capacity."—War Work of the St. Louis Schools, St. Louis, Mo., September, 1918.

The school-home garden. — An auxiliary educational activity which permits of high correlation between home and school and which meets with great favor from parents and children alike is the school-home garden. School gardens which are mere miniatures of real gardens have rarely proved to be of any great value except in the large cities. The school garden projected on a large scale or the school-home garden, when placed under the supervision of a school garden expert who has become a member of the educational staff, has the hearty approval of teachers where either has been developed. Through the school-home garden these advantages are secured:

1. A wise selection of vacant lots will eliminate undesirable rubbish heaps or dumping grounds.
2. The planning of a back yard garden requires a spring clean up, the orderly arrangement of the yard, and a carefully considered program.
3. The home garden may become the project about which arithmetic, drawing, English, nature study, and science instruction may center.
4. The home garden offers to the child opportunity for investment, for realizing the returns from honest labor, for permitting the child to make his contribution to the economic support of the home while adding to his own health and strength.
5. It permits the parent to feel that the school is an institution looking toward the welfare of his home and family. In keeping the child from the streets, in arousing his interest in his home life, and in lightening the expenses of maintaining a family, the school-home garden may accomplish what no other single agency can do.

6. The home garden bridges over the long vacation period and from it may develop other home interests such as canning, poultry raising, and the like, all of which lay emphasis on the important elements of production and conservation.

The investment made by a community in the salary of a supervisor of this work becomes a good business investment. The supervisor spends his winter months in preparing teacher bulletins showing possibilities of correlation with other school work, in selecting the vacant lots which are to supplement the back yard gardens, in supplying parents and press with valuable garden literature and in stimulating universal interest in this and kindred activities.

The program for a school to follow where no school garden expert is employed may be similar to the outline given in the New York State School Bulletin of March 15, 1919.

OUTLINE OF GARDEN ACTIVITIES

ORGANIZATION

1. Enroll the pupils.
2. Secure the sympathy and consent of parents.
3. Make a survey of community for vacant lots and home plots suitable for gardens.
4. Prepare ground for community plots.
5. Secure garden supplies such as seed and fertilizers.
6. Coördinate the efforts of coöperating organizations.

INSTRUCTION

1. Secure project manuals.
2. Equip the library with garden circulars, bulletins, and books.
3. Provide concrete teaching material.
4. Plan field trips and demonstrations.
5. Directors may instruct groups of teachers who in turn will instruct pupils.

SUPERVISION

1. Personally supervise gardens.
2. Arrange for group meetings of project pupils.
3. Group meetings of teachers and assistant supervisors.
4. Give attention to garden accounts and approve for credit.
5. Conduct community exhibits of garden products.

Below are given records¹ of typical garden projects as kept by some New York state children in the year 1918. These records may assist teachers in arousing interest among their children in this activity.

TABLE XXXIII
RECORDS OF TYPICAL GARDEN PROJECTS

PUPIL	AGE	GRADE	TOWN OR SCHOOL	SIZE OF GARDEN (sq. ft.)	CHARGES	RECEIPTS	NET PROFIT	PAID SELF FOR LABOR	TOTAL PROJECT INCOME	HOURS OF LABOR
1	12	8	Troy . . .	600	\$11.47	\$33.37	\$21.90	\$4.32	\$26.22	54
2	12	7	Barton. . .	1000	14.19	32.67	18.48	4.50	22.98	30
3	14	8	Little Valley .	2400	9.45	28.15	18.70	3.15	21.85	28
4	14	8	Troy . . .	6000	63.15	192.85	129.70	36.00	165.70	450
5	14	8	Brutus. . .	5400	15.40	20.57	5.17	4.65	9.82	31
6	12	7	Newark Valley	3500	10.48	22.60	12.12	4.18	16.30	33
7	11	7	Troy . . .	800	7.16	56.21	49.05	2.41	51.46	30
8	11	6	Newark Valley	500	3.51	6.71	3.20	2.37	5.57	20

Athletics and playground activities.— The classroom teacher is vitally concerned in the opportunities provided children for wholesome play. Where play facilities are lacking and it becomes necessary for children to give expression to their physical desires by “hopping” freight cars, tres-

¹ New York State School Bulletin, March 15, 1919.

passing on forbidden property, and playing on the streets, the assistance the teacher secures from such activity is questionable. The playgrounds surrounding the schools of our cities are entirely inadequate, as shown in Table XXXIV, where are given the playground areas available per child of enrollment in six cities.

TABLE XXXIV
THE PLAYGROUNDS OF SIX CITIES

PERCENTAGES OF SCHOOL CHILDREN ENROLLED WHO WERE ALLOTTED	30 Sq. Ft. OR LESS	30-100 Sq. Ft.	100 Sq. Ft. OR LESS	100-200 Sq. Ft.	200 Sq. Ft. OR OVER
St. Paul, Feb., 1917 ¹ . .	29.1	56.1	85.3	9.9	4.9
Denver, 1916 ²			82.0	12.5	5.5
Salt Lake City, 1915 ³ .			37.0	32.0	31.0
Milwaukee, March, 1916 ⁴	39.3	40.7	89.0	9.5	1.5
Omaha, June, 1917 ⁵ . .	9.0	49.0	58.0	32.0	11.0
Paterson, March, 1918 ⁶ .	78.8	21.2	100.0		

PLAYGROUNDS SHOWING ⁷	LOWEST NUMBER OF SQUARE FEET PER CHILD	MEDIAN NUMBER OF SQUARE FEET PER CHILD	HIGHEST NUMBER OF SQUARE FEET PER CHILD
St. Paul	4 sq. ft.	60 sq. ft.	1889 sq. ft.
Denver	40 sq. ft.	130 sq. ft.	1037 sq. ft.
Salt Lake City . .	4.1 sq. ft.	62 sq. ft.	2560 sq. ft.
Omaha	23 sq. ft.	97.3 sq. ft.	964 sq. ft.
Milwaukee	8 sq. ft.	38.9 sq. ft.	598 sq. ft.
Paterson	4 sq. ft.	15.2 sq. ft.	49.4 sq. ft.

¹ St. Paul Survey, St. Paul, Minn. ² Denver Survey, Denver, Colo.

³ School Organization and Administration (World Book Co.).

⁴ Milwaukee Building Survey, Milwaukee, Wis.

⁵ Omaha Building Survey, Omaha, Neb. (not published).

⁶ Paterson Survey, Paterson, N. J. ⁷ Dates as above.

On many of the playgrounds of the schools listed in this table it is impossible to organize play and games of any kind. The children of many schools have no allotted place for play, either at school or away from school. Sound, healthy bodies and the wholesome pleasure of indulging in group games and contests are assets which are in many communities denied the schools. Adequate playgrounds are as essential in the equipment of schools as adequate classrooms. The play program will involve all children. Seasonal festivals and pageants, athletic tournaments and league contests should supplement the regular daily program of play. The aid of community organizations should be enlisted in securing playgrounds and playground supervision. The boy and girl should have every opportunity for developing into robust adulthood with a clean, social sense and a spirit of justice in the treatment of others.

The school library. — The desirable provision in any school system is one library room in every elementary school, especially those schools having sixteen rooms or more. In this way only will many children be enabled to secure a contact with suitable books and acquire the power of using books. A library room may be of standard classroom size and simply equipped. Besides the stacks and shelves for books, an adequate number of tables and chairs, magazine and newspaper racks, and a bulletin board constitute the essential equipment. Suitable reading and reference books should be provided without stint for every elementary library. The reference books should include dictionaries, encyclopedias, atlases, directories, and year-books which will offer children the widest opportunities for research. A librarian, trained in library technique, whose

time is used for guiding the reading and reference work of children is needed as much in the upper grades of the elementary school as in the high school. Where a library room has been set apart in a school building, it should be found possible to use it every day and during school hours. It is absurd to think of a school library which cannot be used by children except at the noon hour or at the close of the school day.

Library facilities for all children. — Where library rooms are not provided and even where conditions seem to prevent any possibility of securing any desirable provision, an energetic and undaunted teacher or principal will find a solution which will make library books accessible to the children. The principal's office may be made to serve as a library by lining the walls with bookshelves. A side corridor which is not utilized for passage or exit purposes may be transformed or other available space utilized though it may not meet the desirable standards. The school library should be a branch of the public library, but should not consist merely of small traveling classroom libraries.

The school library should be available for all grades for constant use. In this way only will the child fully realize of what public library privileges really consist. If the use of books for serious purposes is encouraged, the school library branch will become the training school for the public library. In many communities the total annual circulation of public library books indicates a lack of the transfer on the part of pupils from school to public libraries after they have left school. The small percentages of homes in many communities utilizing public libraries is another indication of the great need for the maximum

utilization of school libraries and a coöperative transfer from school to public libraries. American homes with few books of any kind in them are so numerous that the teacher who develops on the part of her pupils a love for good reading and a knowledge of library opportunities, and is instrumental in causing them to form the library habit, makes a splendid contribution to a future intelligent electorate.

Coöperation with the public library. — The public library cannot do its best work without the complete coöperation of the public school. A maximum use of public library facilities will be made only when librarians and teachers unite in endeavoring to develop the library function. More emphasis by teacher and librarian alike upon the educational rather than recreational character of this function is needed in order to enable the library to contribute to the education of the young man or woman after leaving school.

Sufficient opportunity for pupil participation in maintaining this coöperation may be developed in various ways.

1. In many communities the public library should offer a brief training to students in connection with high school courses which will furnish opportunity for practice work in the library and for library responsibility in the elementary schools.

2. The public library may coöperate with the children of the grades in creating a public museum of local history which can be made available for civics and history classes. The perpetuation for the community of the historical phases of local contributions to the World War should

be made possible through the combined efforts of school children, teachers, and public librarians. This plan involves no haphazard program but a continuous coöperation.

3. The grade children through the medium of their geography classes may participate in the creation of a public industrial exhibit analyzing in great detail the industries and natural advantages of the community. The public library should give such an exhibit an important place in its rooms. The child or class group which has succeeded in having a meritorious contribution to such an exhibit accepted will be greatly encouraged. Further contributions to the common cause may be expected from such training.

4. The public library will find it necessary to develop the school attitude toward children. Its campaign for more and better literature in the homes will include active participation on the part of children. Continuous publicity of how the children are assisting the library, with charts showing additions in circulation thus obtained, will help in constantly connecting a larger percentage of homes with sources of good reading material.

Junior civic organizations. — The School City, Junior Municipal Courts, Junior Boards of Trade, and other similar organizations modeled after the adult plan have met with considerable success in many school systems. Of these the Junior Board of Trade tends to become the most permanent and therefore the most desirable to develop for any school.

The program of the Junior Board of Trade includes, in some places, membership on the adult city board as

well as on its important committees. These representatives are required to make reports from time to time to their colleagues to indicate what contributions they have made to the problems under discussion and to map out with their colleagues their future action.

Junior Boards of Trade have met with success in campaigns calling for the extension of playground facilities; in the creation of industrial exhibits; in gathering materials and making charts and graphs for the annual booklet of the chamber of commerce; and in similar enterprises. The possibilities of service are without limit. Through such relationship there are aroused in boys and girls an attachment to community interests, the realization of the meaning of complete community coöperation, and ambitions for leadership and achievement.

Musical organizations. — The school which pays attention to the development of the recreational side of music soon discovers that its student body is adding desirable qualities to its morale. School orchestras, school bands, school glee clubs, and other types of musical organizations have a distinct place in any school program. It should not be necessary to steal the time required for this work from the regular program. A definite place and time should be set aside when the program is being arranged. The child who is fortunate enough to have home provision made for instruction in instrumental music is thereby equipped with a social advantage which it is desirable that the school give to any child who may wish to learn to play. The addition to the spirit and life of the school that accrues when members of the student body make contributions in the form of instrumental and vocal musical

selections to assembly programs is not measurable but none the less noticeable. From the small beginnings of school orchestras and other school musical clubs have frequently grown community musical organizations of wide influence and great value.

Motion pictures.—The equipment of a modern school includes motion picture apparatus. Arrangements for securing high class films of educational value can be made at moderate cost. Where it has not been found possible to provide motion picture apparatus, the teaching staff should endeavor to exercise a partial, if not complete, censorship of the pictures presented in their localities. Coöperation with motion picture managers whereby high grade educational features are presented from time to time will prove valuable. The film-producing concerns are anxious to cater to educational demands. The net result will, no doubt, be a decided improvement in educational offerings and a reduction in costs which will make possible the introduction of this wonderful educational device into an increasingly larger number of schools.

Other organizations.—It is not possible within the bounds of this chapter to outline in detail all the educational agencies which assist in providing adequate materials for classroom projects or in giving the children opportunity for initiative and for motivation of their academic work. Among other meritorious clubs and societies the following have a place in such a group.

The Red Star Society.—A fine aid in the cultivation of humane instinct during a period when appeals to sympathy for dumb animals are powerful and influences are lasting.

Little Mothers League.—An opportunity to teach

hygiene, nursing, and care of infants very effectively and to serve the double purpose of developing the maternal instinct in tender years and promoting domestic interest and service very greatly appreciated in the home life of children.

City History Club. — The purpose would be to study the history and historic monuments and prominent features of the local community. It should develop community interest and pride and cultivate an historic sense and attitude.

Canning Clubs, Audubon Clubs, and Photographic Clubs are other types which have proved their possibilities.

The press and the school. — School superintendents realize the necessity for keeping parents and citizens constantly informed regarding the activities, growth, and plans of their school systems. Toward this end weekly bulletins have been distributed to the homes through the aid of the children, monthly reports on special topics have been prepared, and the local press has been made the medium for interim reports.

The use of the press should not be limited to the work of the central administrator's office. Children's columns, children's sections, and school pages in the local press become effective devices for arousing the interest and competitive spirit of children. It is understood that proper supervision and censorship must be maintained. The school program can without difficulty be arranged so that it annually becomes the project of an eighth grade or seventh grade class to supply the copy for this form of publicity. A class organization with officers and editors may be formed for this purpose. The importance of the

work may be so emphasized that the children eagerly anticipate their opportunity for participation. The public may in this way be expected to become sympathetic with school problems and constantly informed of school needs.

The school paper. — When coöperation with the local press is not desirable or feasible, the school paper will be the substitute. Issues of high-school papers are quite common. Coöperation between high and elementary schools in the production of a paper for the entire school system will level many of the barriers between these two branches of the educational system. Such a paper, with special sections for both types of schools, printed on the school press and distributed without charge to all children from the fifth or sixth grades through the high school, may be made a permanent and successful auxiliary in the development of a wholesome school spirit.

Limitation of extra-curriculum activities. — No school will endeavor to engage in all the extra-curriculum activities here mentioned. The entrance into new fields will be made only after serious study of what success has been found possible in similar situations. The school program in this field should be determined in advance for a whole year. The success of all of these enterprises depends in large degree upon proper teacher leadership and guidance. This guidance will restrict the activities of each child so that he may make an actual contribution in one field rather than dabble in many. The leadership must be constant and inspiring and must overcome all obstacles. Only as the results lead toward better citizenship and higher ideals will these enterprises be accepted as satisfactory.

QUESTIONS

1. What library opportunities are being offered to the children of your school? What changes can be made in the lesson assignments in history and geography where adequate library facilities are furnished?

2. Make a list of six to eight of the best magazines that you desire supplied each year to your school library. Why are these magazines desired in preference to others?

3. Organize a plan for a school year whereby all children of your school are provided with opportunity for participation in various auxiliary activities.

4. Ascertain through the children the number and kinds of books that are to be found in their homes. How can you make such a study of value in the education of those children?

5. Find the opportunity to become familiar with the Boy Scout oath. Into what subjects is it possible to introduce instruction connected with this oath so as to assist Scouts in becoming worthy members of their organization? How may this be accomplished?

6. With the aid of a trained librarian, develop for your grade a syllabus in the use of the library patterned after the following outline of a Library Syllabus from 7B grade:

Alphabeting

Structure and printed parts of a book

English dictionary and general encyclopedia

Use of the index of a book

Card catalogue

Arrangement of books on the shelves

General use of the library.

7. Organize for your grade one week's instruction in English centering about the activities of the Junior Red Cross.

8. With the assistance of your fellow teachers outline the advantages and disadvantages of establishing an orchestra in your school.

9. As a project connected with the work in English have your class plan the weekly school column for the local press. Teach the

class to discriminate between articles having "news value" and those lacking in this respect.

10. What desirable aims in education may be achieved from pupil activity in (a) The Boy Scouts; (b) A Junior Board of Trade; (c) Junior Red Cross; (d) A School Paper?

11. Explain how a teaching staff may exert a wholesome influence over the kind of pictures presented at the local motion-picture houses. Can you list a number of educational films which will correlate well with your school programs and which you recommend children to see?

12. What are the playground needs of your school? What part can the school play in the betterment of such conditions?

13. In the collection of newspapers and other salvaged articles what precautions are taken against dangers from fire and unsanitary accumulations?

REFERENCES FOR READING

Carney, Country Life and Country Schools.

Cubberley, Public School Administration.

Jackson, A Community Center.

War Work in St. Louis Public Schools. Board of Education, St. Louis, Mo.

CHAPTER XIV

THE SCHOOL PLANT AND ITS EQUIPMENT

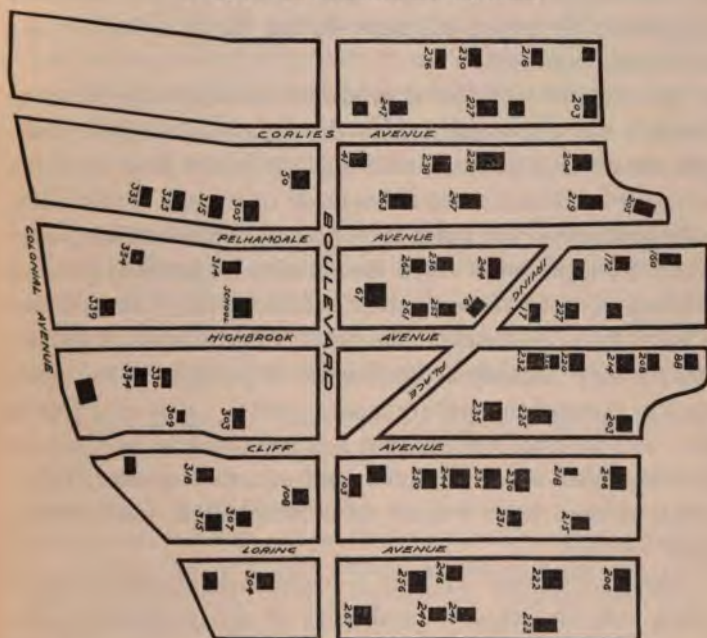
A THOROUGH knowledge of the school plant and its equipment will be helpful to the work of any teacher. The teacher's interest in the physical side of the school should not be limited to the classroom alone. The conditions prevailing in the playrooms, the lavatories, the lunchroom, the auditorium, and other parts of the building have their influence on the children of all classes. It is very essential to the good management of any school that the principal be assisted in his problem of supervision of the entire building through an active interest on the part of all teachers in the physical needs and opportunities of the whole school building. In the school of to-morrow the activities of no class will be solely restricted to the classroom. The wider knowledge which the teacher may have of the school building will make possible for all children more extensive and profitable use of the building.

Learning to know the school district. — Not only a complete knowledge of the building itself but also a thorough familiarity with the district from which the children come should form part of the working capital of the teacher. The classroom teacher will approach the problems of a school year with a maximum of eagerness and a desire for complete orientation in his sphere of work. He will learn

to know his school district and school building as well as his own classroom before the first day of school. It will be wise for him to study his school district in its relation-

FIGURE IX

A map of a school district showing homes.



ship to the other school districts of his city or community. He will learn the streets or roads included in his district from the local maps that are available, and may even execute for his loose-leaf notebook a map for ready reference when parents and children come to school for the opening day. In thinly inhabited districts teachers may desire to

become as thoroughly familiar with their districts as a pastor in an eastern city parish when he made for himself a map locating each house with the name of the resident attached, as shown in Figure IX.

The school which does not include in its equipment a map of its district where it is ready of access for all teachers frequently places the teachers during the course of a year at a disadvantage.

The teacher will find it profitable to study the environment of the school plant with the same intensity and purposefulness as a business man displays in the determination of a new location for one of his chain of stores. It is a common practice of big business concerns to have an employee check for a period of days the number of possible patrons passing by an attractive corner before actually entering into a lease of the premises. The teacher's problem and responsibility may possibly be considered as being fully as important as those of the private business man. It is conceivable that the advance information a teacher secures of the conditions under which he must work and the advance friendships he may form will be no inconsiderable factor in his final success.

This preliminary study of a school environment may include the historical development of the community, the nationalities of its inhabitants, the occupations of the parents, the attraction of employment opportunities for young boys and girls, the danger-points, such as railroad crossings and intersecting car lines, which confront children on their way to school; the vicinity of undesirable loafing places for boys; the prevailing types of homes and their condition; the possibilities for home and community gar-

dens; the available auditoriums for parent and community gatherings; the character of the moving-picture houses, and other such types of data which have an important bearing on the solution of a teacher's problems.

Scoring the school building. — The teacher who would be well informed regarding the building in which he plans to work may find it profitable to study the building with the assistance of a building score card.¹ The utilization of such an aid will enable the teacher not only to acquire a thorough knowledge of the entire building, but will also permit of comparisons with the standards which have been set up in this field.

Teacher support in the betterment of school building. — If school housing facilities in the United States are to be improved to the degree in which improvement is needed to-day, the aid of the classroom teachers will be required, for it will be only through their insistence upon proper hous-

¹ George D. Strayer, Score Card for School Buildings, Bureau of Publications, Teachers College, Columbia University.

The Strayer Score Card for measuring school buildings is here reproduced. It will be noted that the basis for scoring is 1000 points for a perfect building. Three columns, it will be noted, are allowed for scoring. While actually engaged in scoring a building a scorer will utilize the blank spaces opposite the numbers in Column 1. The blank spaces opposite the numbers in Columns 2 and 3 will then be filled out at the convenience of the scorer. If in scoring a school building it is felt that certain items which are included on the score-card are not needed in the community which the building serves, credit may be allowed those items in making up the final score. The complete details of the scoring of school buildings in two large school systems are given in the St. Paul Survey (Department of Education, St. Paul, Minn., 1917) and in the Paterson, N. J. Survey, 1918.

SCORE CARD FOR CITY SCHOOL BUILDINGS Score of Building

	1	2	3
I—Site			
A. Location		55	125
1. Accessibility	25		
2. Environment	30		
B. Drainage		30	
1. Elevation	30		
2. Nature of soil	10		
C. Size and Form	40	40	
II—Building			
A. Placement		25	165
1. Orientation	15		
2. Position on site	10		
B. Gross Structure		60	
1. Type	5		
2. Material	10		
3. Height	5		
4. Roof	5		
5. Foundations	5		
6. Walls	5		
7. Entrance	10		
8. Aesthetic balance	5		
9. Condition	10	80	
C. Internal Structure			
1. Stairways	35		
2. Corridors	20		
3. Basement	15		
4. Color scheme	5		
F. Water Supply System			
1. Drinking	10	30	
2. Washing	10		
3. Bathing	5		
4. Hot and cold	5		
G. Toilet System		50	
1. Distribution	10		
2. Fixtures	10		
3. Adequacy and arrangement	10		
4. Seclusion	5		
5. Sanitation	15		
H. Mechanical Service System			
1. Elevator	5	10	
2. Book-lifts	2		
3. Waste-chutes	3		
IV—Class Rooms			
A. Location and Connection	35	35	200
B. Construction and Finish		95	
1. Size	25		
2. Shape	15		
3. Floors	10		
4. Walls	10		
5. Doors	5		
6. Closets	5		
7. Blackboards	10		
8. Bulletin board	5		
9. Color scheme	10		

ing and proper equipment that buildings will be so built and equipped as to avoid the glaring faults of the past and to permit of full participation in the extensive school program of the future.

Surveys of school buildings. — Survey commissions in the measurement of all the buildings of school plants in a number of school systems have found it necessary to point out that many of the buildings were totally unfit for the housing of school children and teachers over a period of five or more hours in the school day. The scores allotted to the buildings of five school systems on the 1000 point Strayer Building Score Card appear in Table XXXV.

In these intensive studies school buildings were found which rated as low as 274 points and as high as 927 points on the score card. Experience resulting from these applications of the score card, involving approximately 225 buildings, suggests that a score of 900-1000 indicates a highly satisfactory degree of construction and equipment. In fact, in only a few minor respects does such a building deviate from acceptable standards. A rating between 700 and 900 points is fairly satisfactory. It should be studied in the light of its component parts. Slight building alterations will tend to raise considerably the score of a building of this group. A score of 600 to 700 points has meant, as experience in surveys points out, that considerable alteration was needed before buildings could be brought to a satisfactory standard of efficiency. Buildings that have scored 500 to 600 points have proved to be highly unsatisfactory and yet not so far gone but that extensive repairs and replacements could make them reasonably habitable. When the scores of buildings have fallen below 500 points,

it has been the universal judgment of those who have applied the score card that speedy abandonment of the building for school purposes was the only justifiable course to be

TABLE XXXV

SCORES ALLOTTED TO SCHOOL BUILDINGS IN FIVE SURVEYS BY JUDGES USING THE STRAYER SCORE CARD ¹

ELEMENTARY SCHOOLS					
	Nassau County	Framingham	St. Paul	Omaha	Paterson
300 or below					
301- 500	1	2	9	16	12
501- 600	1	14	23	17	6
601- 700	7	1	13	10	
701- 800	12	1	3	8	3
801- 900	13	1		1	3
901-1000	5		1		1
Total	39	19	49	52	25
HIGH SCHOOLS					
300 or below				1	
301- 500					
501- 600	1			2	
601- 700	1			1	
701- 800	5	1	1		1
801- 900	7		3		
901-1000	1				
Total	15	1	4	4	1

¹ N. L. Engelhardt, A School Building Program for Cities. Bureau of Publications, Teachers College, Columbia University, p. 58.

followed. In all instances where scores of 500 or less have resulted, it has seemed that expenditures for repairs would be highly excessive. It has also seemed that there was little possibility, even with the expenditure of relatively large sums of money, to secure as a result of such repairs a building which was suitable for school purposes in the modern sense.

Communities may well consider the question of whether it is a wise and proper policy to ask children and teachers who come from homes that would rate from 700 to 1000 points on a 1000-point score card adapted for home measurement to spend their school lives in buildings which rate as low as some of those indicated in Table XXXV. These low school building scores point out the entire lack in the facilities which should insure the health, safety, and happiness of the users. Teachers are also under obligations to secure more adequate housing facilities for children than are found in school buildings ranking at 500 points or less. No teaching group need hesitate to present the inadequacies of a dilapidated school building to parents and citizens in such incontrovertible terms that remedial action is taken. Failure to do so is frequently productive of a complete indifference on the part of those parents and citizens to the many other school problems. Teachers should be unwilling to so belittle their profession as to teach for a period of years in a building which should have been condemned and abandoned years ago. Teachers should refuse to thus risk the lives and health of children, as well as to gamble on their own chances of success. They should not hesitate to speak out boldly and plainly.

Questions which teachers should ask. — Yet many school buildings are found in American cities, the very use of which is criminal. The conditions in many localities are indicative of much lack of reasonable foresight and common sense. It is not unreasonable to suggest that all readers of this chapter answer for themselves from time to time the questions which involve merely the safety of the children under their charge.

Questions similar to those listed below have been asked again and again, especially after fatal disasters have occurred. The failure to aid in the removal of existing undesirable conditions may be considered as much a teacher-failure as the failure to include reading and arithmetic in the teaching of a fourth-grade class.

Question 1. Do the outer doors of your school building open outward?

Question 2. Is your school building properly equipped with fire escapes?

Your own life and the lives of your entire class may depend on the existence, condition, and usability of fire-escapes. The standard fire-escape is a fireproof stair-well. Any other type of structure is unsatisfactory in respect to one or more details. The fire-escapes of many school systems which are built with the idea of preventing children from getting in instead of permitting them to get out with the utmost rapidity may be pointed out as an unwise expenditure of public funds. Their existence may lull the teacher into a feeling of security but may be the cause of a bad disaster.

The following quotation indicates what may be found in some school systems.

"Of the fifty two-story or more elementary school buildings in use in 1917, eight were equipped with fire-escapes. These eight buildings had eighteen fire-escapes, of which four on the old Clifton Hill School were made entirely of wood. Twelve of the remaining thirteen fire-escapes might easily have been rendered useless because all the windows facing upon them or underneath them were fitted with plain glass, which offers no resistance to fire."¹

Question 3. Is there a fire extinguisher in the immediate vicinity of your classroom?

The acceptable standard is one fire extinguisher for every 5000 square feet of floor area.

Question 4. Has the fire extinguisher hanging just outside of your classroom been refilled within the past year?

There is a type of fire extinguisher that requires annual filling. The attached tag should tell the story. Fire extinguishers which have not been refilled over a period of years may frequently be found in schools. Such extinguishers may not be effective when needed.

Question 5. Have you ever been taught how to use the fire extinguisher nearest your classroom? Have you lifted it? Do you understand how it operates? Could you with its aid put out a fire?

Question 6. Is it the custom of your janitor to lock any outside doors after your class has begun its sessions for the day?

Question 7. Are sanitary toilet facilities provided for the children of your class?

As a teacher you owe it to the children to use your knowledge and judgment in securing well-lighted, clean-smelling,

¹ A School Building Program, p. 85.

and modern sanitary toilet rooms. The damp, unsanitary, foul-smelling, dimly lighted, and poorly equipped toilet rooms into which many classroom teachers send the children under their charge are a disgrace to the teaching profession. The chapters on school buildings in the majority of school surveys disclose the great frequency of unsanitary toilet conditions in the school systems of the country. Only by universal teacher activity can this unfortunate situation be changed.

Question 8. Are adequate and sanitary drinking fountains available in the halls for the children of your class or have drinking fountains been installed only in the toilet rooms or in the basement?

Question 9. Are you and your fellow teachers provided with an adequately equipped teachers' room? Do you not owe it to your own welfare and the interests of the children of your school to secure this highly essential equipment in your building?

There are many schools where no provision is made for the sick child or teacher. Boards of education and architects should have it impressed upon them that teaching is a highly exhausting profession, and that a suitably furnished rest room is just as necessary for the welfare and progress of a school as a principal's office or a meeting place for board members.

Question 10. Have you and your fellow teachers been provided with a lunchroom where you may partake of a hot lunch under conditions that are not repelling and unhomelike? Have you interested yourself sufficiently in the children who must occasionally or always bring their lunch to know under what conditions they are required

to eat of food which is to sustain them for the remainder of the school day?

In a study made in February, 1918, it was found that in only 10 out of a total of 221 buildings that are utilized in 28 unselected cities of the United States were lunchrooms for either teacher or child provided. Surely teachers and children are required to eat lunch in a much larger number of these buildings.

Teachers may readily add to the above list many other important questions concerning their school building and their own responsibility toward a betterment of the material side of their school. The importance of an adequate equipment and the need for adherence to accepted standards in the construction of new buildings become very apparent to the school teacher who has attempted to analyze his managing and disciplinary difficulties and has discovered how many are due to building faults. A teacher in a perfect building with adequate equipment has far greater possibilities for personal success than he would have under the strain of less favorable surroundings.

Desirable types of rooms for elementary schools.— It is not too much to expect of the classroom teacher that he become familiar with the latest educational books on school buildings and put himself in a position where he may pass intelligently and accurately upon the larger phases of building problems. The standard schedule of rooms for a sixteen classroom elementary school, as adopted by the Department of School Buildings of Pittsburgh, Pa., will indicate the equipment which a teacher has a right to expect for his work. This list is given below in terms of the regular classroom as the unit of space.

TABLE XXXVI

SCHEDULE OF ROOMS FOR A SIXTEEN-ROOM ELEMENTARY SCHOOL BUILDING

	16 Classrooms		16 Units
	1 Ungraded Room		$\frac{1}{2}$ Unit
	1 Kindergarten Room	}	$1\frac{1}{4}$ Units
	1 Kindergarten Wardrobe		
	1 Kindergarten Toilet		
	1 Kindergarten Workroom		
Household economy	1 Sewing Room	}	$1\frac{1}{4}$ Units
	1 Wardrobe and Locker Room		
	1 Fitting Room		
	1 Model Bedroom		
	1 Demonstration Room	}	$\frac{1}{2}$ Unit
	1 Domestic Science Room		
	1 Wardrobe and Locker Room		
	1 Pantry		
	1 Model Dining Room		
			$1\frac{1}{4}$ Units
			3 Units
Industrial training	1 Bench Room	}	$1\frac{1}{2}$ Units
	1 Wardrobe and Locker Room		
	1 Storage Room		
	1 Demonstration Room		$\frac{1}{2}$ Unit
	1 Drafting Room	}	1 Unit
	1 Wardrobe and Locker Room		
	1 Storage Room		
	1 Girls' Playroom		
	1 Boys' Playroom		

Administration	{	1 General Office	}	2 Units
		1 Private Office		
		1 Book Storeroom		
		1 Physician's Room		
		1 Teachers' Room		
		1 Janitor's Supply Room		
		1 Assembly Room, 700 seating capacity		
		2 Paved Play Yards, each 11,000 sq. ft.	(This may include walks)	

Scoring a rural school. — Teachers of rural schools may frequently desire to make a more intensive study of their permanent school plant than is necessary for the teacher in the large city school system. A score card for a rural school was adapted from the Strayer City School Building Score Card and perfected with a set of detailed standards by Professors E. L. Holton and V. L. Strickland of the Kansas State Agricultural College.¹

Before attempting to use the card one should become thoroughly familiar with it in all its detail, and with the problems involved. This means virtually that one should be versed in rural-school hygiene and architecture and in the best up-to-date theory and practice in school work.

In scoring a school the detailed standards should always be kept in mind, and if the scorer is not thoroughly familiar with them, they should be referred to whenever there is any doubt as to what they are. In addition to entering the proper score on the card, notes as to deficiencies and recommendations should be made on a separate sheet for future reference, following the outline of the score card. This will be found particularly worth while in making reports or records.

¹ Copies may be secured from the college at Manhattan, Kans.

.....Rural School, Dist. No....., County.....

PERFECT SCORE: 1000 points

Scored by.....

I. Horse shed	10
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DETAILED STANDARDS AND SPECIFICATIONS FOR RURAL SCORE CARD¹

THE PERMANENT PLANT

I. SITE —

A. Location :

1. Accessibility — main and cross roads, centrally located, not more than 2 miles from the farthest home if children walk, 6 if transported.
2. Environment — not adjacent to farmhouse or barnyard, railroad, stream, pond, or cliff; sky line from adjacent timbers not over 30 degrees above base line.

B. Drainage :

1. Elevation — preferably on top of moderate rise, natural drainage away from building, slope not over 5 per cent.
2. Nature of soil — fertile, loamy, not stone or clay.

C. Size and form :

Minimum 3 acres; rectangular in ratio of 2 or 3 to 1.

D. Landscape effect :

Artistic arrangement of trees, shrubbery, outbuildings, walks, and playgrounds. (See bulletin, "School Buildings, School Grounds, and Their Improvement," Kansas State Department of Education, 1911.)

E. Walks, fences, hitching posts :

Walk from road to front entrance and from building to outbuildings, cement or brick; grounds fenced with neat metal or wood fence; a few substantial hitching posts.

II. BUILDING —

A. Location :

1. Orientation — light exposure southeast, east, southwest, west, and south, in order of preference.
2. Position on site as regards economy of playgrounds and appearance — corner or middle of end, standard form.

¹ By Holton and Strickland.

B. Gross structure :

1. Type — cottage type, square or rectangular (not "box-car" type).
2. Foundation — brick, stone, or cement, weather tight, $1\frac{1}{2}$ to 2 ft. unless basement.
3. Roof and walls — hip or deck roof, shingle; walls well constructed, brick, stone, or sheeted, building paper and drop siding.
4. Entrance — porch and stoop, minimum 6 ft. by 8 ft., easy and substantial steps.
5. Balance and finish — well proportioned in dimensions, roof, entrance, and general appearance; substantial and pleasing in detail of structure, painting, and finish.
6. Condition — good state of repair, well painted, free from defacement and demarcation.

C. Internal structure :

1. Construction :

- a. Size — minimum 15 sq. ft. floor space and 200 cu. ft. of air space per pupil (maximum enrollment), 12 ft. ceiling.
- b. Shape of rooms — rectangular, ratio of 4 or 5 to 6.
- c. Floors — closely laid, smooth, level, solid; hard quarter-sawed or maple flooring.
- d. Walls — rough or "floated" plaster, plain casings and finish, absence of irregularities and dust-catching constructions.
- e. Doors — open out, well hung, substantial, mortise locks, automatic spring and check, minimum 2 ft. 10 in. by 6 ft. 10 in.
- f. Blackboards — slate, minimum 20 linear ft., 4 ft. wide, chalk rail 26 in. from the floor.
- g. Color scheme — flat painted walls and ceiling, natural varnish finish woodwork, ceiling white or cream, buff or green tinted walls, dado darker same color.

2. Illumination :

- a. Glass area — one fifth to one fourth of floor area.

- b. Windows — banked to left of pupils, not nearer than 5 ft. to front of room, narrow mullions, near ceiling, $3\frac{1}{2}$ to 4 ft. from floor.
- c. Shades — substantial, adjustable from bottom.
- 3. Extra rooms :
 - a. Cloakrooms — separate for boys and girls, well lighted, adequate hooks.
 - b. Closet or storeroom — preferably teachers' closet and separate storeroom for books and supplies.
 - c. Library room — preferably a recess off main room for bookcases and reference table.
 - d. Workroom — separate room opening into main room, with double door; provision for domestic-science table and equipment and boys' work bench.
 - e. Fuel room — in basement, on same floor near furnace, or separate building conveniently located.

III. SERVICE AND EQUIPMENT —

A. Heating :

Stove of adequate size, good draft control, jacketed ; or standard school heater, *e.g.*, Waterbury, Smith, Old Dominion ; or basement furnace ; thermometer.

B. Ventilation :

Fresh air intake, 12 in. sq., opening from outside through wall and jacket to hottest part of stove or basement furnace ; exits for foul air, 16 in. sq., near floor, same side of room as stove.

C. Artificial lights :

- 1. Distribution — all parts of room well lighted, not located to shine in eyes.
- 2. Adequacy — good reading light, minimum 300-candle power, good condition.
- 3. Safety — substantially hung, safe system ; if gasoline or gas system, properly installed.

D. Seats and desks :

- 1. For teacher — desk, substantial, large enough for books and records, fitted with locks, mouse-proof ; chair, substantial, adjustable.

2. For pupils — single (movable seat and desk combined best), appropriate arrangement and sizes (preferably adjustable), adequate aisles (see bulletin, "Standard Rural Schools," Kansas State Department of Education).
 3. Extra chairs (folding) for special functions and community affairs.
- E. Fire extinguisher :
Permanently placed, working order, handy to stove and workroom.
- F. Water supply :
1. Well — on school grounds, tightly inclosed and covered, not located so as to receive drainage or seepage from toilet ; good pump.
 2. Drinking facilities — sanitary drinking fountain or closed water jar with faucet and individual drinking cups, waste receptacle.
 3. Washing facilities — basin, soap, mirror, paper towels.
- G. Toilets :
1. Adequacy — sufficiently large, warm and comfortable, well constructed, ventilated.
 2. Seclusion — preferably opposite sides of grounds and 75 ft. or more from building, screened by shrubbery or lattice.
 3. Sanitation — all containers of excreta should be watertight and thoroughly screened against insects and vermin ; dry earth closet, septic tank disposal, or watertight vault or box (see "Minimum Health Requirements for Rural Schools," by Dr. Thomas D. Wood, 525 West 120th Street, New York).
- H. Playground apparatus :
Swings, seesaws, basket ball, and the like.
- I. Flagstaff :
On building or separate and taller than building, equipped with rope and pulley.
- J. Horse shed :
For horses of teacher and pupils, if they drive ; also of attendants at community gatherings.

This score card should prove a useful aid in accomplishing a progressive improvement in the rural schools of the country. The standards may be utilized by any state board or local board of trustees in demanding of themselves and their schools higher requirements and final perfection in our schools.

The corridors of a school building. — The school faculty who concern themselves with the general appearance and æsthetic balance of the corridors of the school building in which they labor, to the end that the children come constantly under the influence of beautiful surroundings, such as pictures, busts, friezes, memorials, ferns, and flowers, show much wisdom. The teacher who would realize the difference made in the atmosphere of a school by attractive corridors will find it advantageous to spend a day in a school system, visiting as many as four or five schools. The teacher who has not already had the experience will be surprised at the great differences that apparently exist between schools of the same system because of this factor alone.

The decoration of corridors. — A staff of teachers, regardless of the type of the building in which they are housed, might secure for themselves the privilege of suggesting the color scheme for the decoration of the corridors. Children may be permitted to participate in organizing a plan for the adornment of the walls of the corridors and special rooms. This activity may so influence them that they will tend to use all parts of the building with the same care which they show toward their own property. Where children and teachers become imbued with the idea that the school building is their common home, the problems of discipline become much simpler. The plan of decoration

may well be described in a printed pamphlet describing the pictures, the friezes, and other features. If utilized so that every child meets it in an assignment during his school career, this pamphlet may play an important part in the school course.

The classrooms and their equipment. — The differences which have been mentioned as existing in the equipment and adornment of the corridors of school buildings may be found to even as marked a degree in the classrooms of single school buildings. The teacher who does not set about making the appearance of his classroom individualistic and attractive loses at the outset a control over his children which he might otherwise readily secure. The classroom, without the presence of the teacher, may well be indicative of his personality. Harmony, beauty, and simplicity should prevail in classroom decoration. The selection of the color scheme should be made from the accepted standards of light buff or very light green for the walls, with the ceiling white or extremely light cream. Where children and teacher unite in giving a classroom, for a period, a distinctive designation, such as the Longfellow Room, Independence Hall, the House of Parliament, and the like, and use their ingenuity in providing fitting decorations, greater strength is added to the influence that may come forth from such a room.

The size of classrooms. — An elementary classroom designed to accommodate forty pupils may vary in dimensions from $22 \times 28 \times 12$ to $24 \times 32 \times 12$. The standard number of square feet per classroom will vary from 616 to 768, and the standard number of cubic feet from 7392 to 9984. In smaller rooms children should be housed only on the

basis of 15 square feet of floor area and 200 cubic feet of air space per child. Larger rooms are uneconomical, bring about voice strain on the part of the teacher and eyestrain on the part of pupils, and tempt administrators to enlarge classes beyond the maximum of 40 pupils.

Classroom furniture. — The furniture provided for children in the classroom may be of the movable, adjustable type, or of the stationary, adjustable or non-adjustable kind. The movable furniture has brought with it great possibilities for the complete utilization of the classroom for all types of exercises, and is to be highly commended for that reason.

Any furniture which permits of an arrangement of seating so that children may group themselves about a circle or about two sides of the room is in that degree more desirable than furniture which tends constantly to make the schoolroom appear formal.

The non-movable type of seat and desk, which cannot be adjusted to meet the physical needs of children, is still commonly used in our schools. Where teachers find only non-adjustable seats and desks provided, they will endeavor to have them of varying sizes. A room equipped with three or four sizes of the non-adjustable seat is much more desirable than one equipped with adjustable chairs which are never changed, providing the teacher in the first case reseats his children frequently during the year in order to allow for the rapid growth of some of the children. Where three or more sizes are thus installed in one classroom it is wise to put the smaller seats and desks near the windows that the passage of light may not be obstructed for the children on the far side of the room.

The adjustment of seats.—The need for constant attention in the adjustment of seats in a classroom is clearly seen in Table XXXVII. Here are given for June, 1917, for grades of a large school system in which only one size of non-adjustable seat was installed, the smallest, median, and greatest differences in height between the tallest and shortest boy and the tallest and shortest girl. In Grade III it will be noticed that the median difference for all rooms equipped with non-adjustable seats of one size only was as great as 10.8 inches, while in other grades the median difference was even greater. The teacher's responsibility is most clearly indicated where the greatest differences for each grade are given. When children vary as much as 19, 21, and 22 inches in height, it certainly is unjust to require that they occupy the same sized seat for four or five hours of the day. Such differences in height are more pronounced in the child than in the matured adult and possibly the inconvenience and the discomfort are proportionally greater.

Even though adjustable seats have been furnished by school authorities, it is frequently the case that no adjustments are made over a period of time. If seats are not being adjusted, it is uneconomical for the authorities to buy this more expensive equipment. The teacher and principal will find it advantageous to keep a record of the dates of adjustment of seats when it is done for an entire class or entire school, which will provide a self-check on this most important duty. Children should be urged to report the need for seat adjustments. It has, in some schools, been found possible to place the responsibility for a continuous program for adjustments upon a committee of older boys.

FIGURE X
Plan of Typical Schoolroom

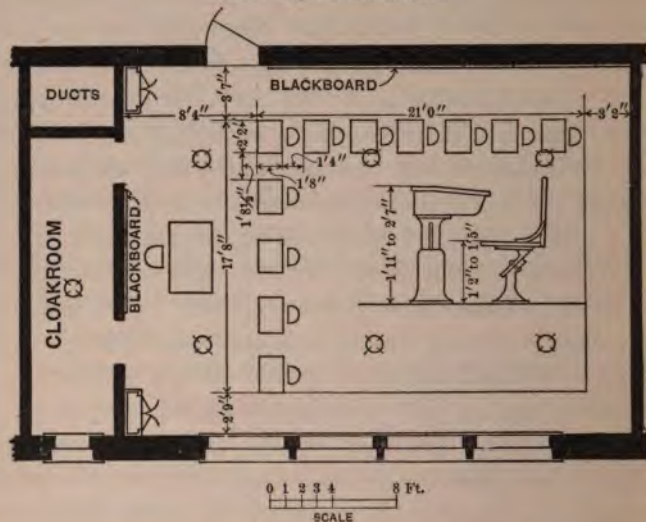


FIGURE XI. Typical Eighth Grade Room

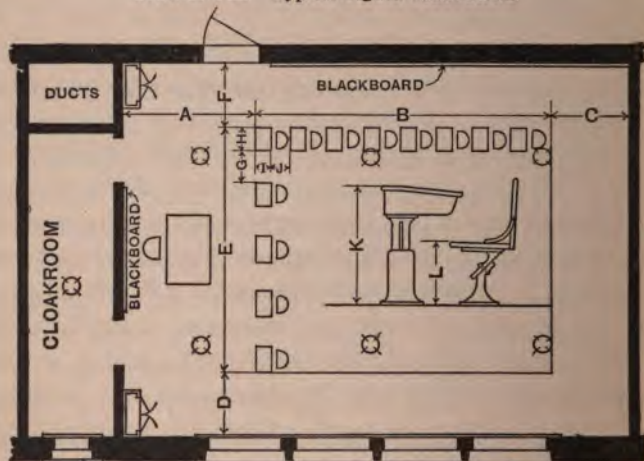


TABLE XXXVII

DIFFERENCES BETWEEN SHORTEST AND TALLEST CHILD IN EACH GRADE

(In a large School System, 1917)

Rooms equipped with non-adjustable seats of one size only

GRADE	Smallest difference in any room between height of shortest and tallest		Medium difference in any room between height of shortest and tallest		Greatest difference in any room between height of shortest and tallest	
	Boy	Girl	Boy	Girl	Boy	Girl
I	3"	2"	8"	8.16"	19"	13"
II	3"	4"	8.05"	8"	21"	14"
III	5"	2"	10.8"	8.6"	19"	19"
IV	6"	5"	9.8"	10.4"	15"	22"
V	1"	2"	9.7"	11."	17"	17"
VI	6"	6"	11.2"	10.9"	17"	16"
VII	5"	4"	11.8"	11.5"	14"	15"
VIII	3"	4"	11.8"	8.1"	19"	12"

In 44 rooms the difference between shortest and tallest boy exceeded 12".

In 40 rooms the difference between shortest and tallest girl exceeded 12".

In 22 rooms the difference between shortest and tallest boy was less than 6".

In 27 rooms the difference between shortest and tallest girl was less than 6".

The arrangement of stationary seats.—The seating arrangement of a classroom where stationary seats are used should not be left to the whim or fancy of the janitor or to the dictates of the dealer in school furniture. The standards suggested in Table XXXVIII for the various dimensions needed in the establishment of rows and distances should prove very acceptable guides for the

teacher in giving instruction for the placement of the seats of her classroom. At the top of this table appear the letters A, B, C, D, etc., which have reference to certain dimensions noted on Fig. X. Letter "K," for example, represents the distance from the top of the desk to the floor. Letter F represents the distance from the side wall to the nearest desk on the right of the room. The other dimensions are represented by other letters. In arranging the seats in a primary room, the room may first be marked off as in Fig. X in accordance with the first line of dimensions of Table XXXVIII. Figure XI represents an eighth grade room with all the dimensions indicated on the figure.

TABLE XXXVIII

DIMENSIONS TO BE USED IN ARRANGING THE SEATS OF ELEMENTARY CLASSROOMS

(Letters A, B, C, D, etc. apply to the dimensions indicated on Figure X)

GRADE	A	B	C	D	E	F
Primary . .	8' 6"	18' 8"	5' 4"	4' 0"	15' 11"	4' 1"
2d and 3d . .	8' 11"	18' 8"	4' 11"	3' 2"	16' 9"	4' 1"
4, 5, 6, and 7 .	7' 5"	21' 4"	3' 9"	3' 2"	16' 8"	4' 2"
8th grade . .	8' 4"	21' 0"	3' 2"	3' 9"	17' 8"	3' 7"

GRADE	G	H	I	J	K	L
Primary . .	2' 0"	1' 7"	12"	1' 4"	1' 5" to 1'	10" 10" to 1' 1"
2d and 3d . .	2' 0"	1' 9"	1' 1"	1' 3"	1' 6" to 2'	3' 11" to 1' 3"
4, 5, 6, and 7 .	1' 8"	2' 0"	1' 4"	1' 4"	1' 8" to 2'	4' 11" to 1' 5"
8th grade . .	1' 8½"	2' 2"	1' 8"	1' 4"	1' 11" to 2'	7' 1' 2" to 1' 5"

The teacher's classroom equipment. — In many school systems altogether too little attention has been paid to the teacher's need of storerooms and equipment. Every classroom should have a book closet opening into it in order to provide storage facilities for books and supplies. In some new buildings, filing cupboards are being provided under the blackboard in the front of the room. School boards should be liberal in their expenditures for teachers' desks. A large flat-top, businesslike desk with ample drawer capacity permitting of a sufficiently large working surface is the most satisfactory kind. A desirable size of desk is $52'' \times 32''$. Those school systems which are furnishing cabinets, five to six feet high with narrow drawers, size 9×12 , for the filing of children's maps, drawings, written classwork, and similar material, surely secure adequate returns in the added efficiency of the teacher.

The blackboards of a classroom. — The teacher and children who use the blackboards of a classroom are entitled to the very best high-grade slate blackboard.

Slate is expensive and if not installed properly according to the heights of the children who are expected to use them, the investment returns may be very low. The standards for distance of blackboard from the floor to the chalk rail are kindergarten and grades 1-2, 24 in.; grades 3-4, 26 in.; grades 5-6, 28 in.; grades 7-8, 30 in.; high school, 32-36 in. The placement of blackboards in the rear of the classroom is not necessary in the grades below the fourth. This space will be utilized to greater advantage for bulletin purposes. Much of the other equipment which is essential for good classroom work in the elementary grades cannot be standardized. The inventory of many class-

rooms in superior schools shows that the following list is quite inclusive. It may be used to advantage in checking the equipment to be provided in a new building. It affords a teacher opportunity of discovering what equipment other school systems are providing. The list ¹ provides for grades 1 to 8.

A LIST SUGGESTING THE KINDS OF MATERIALS AND EQUIPMENT
FOUND IN THE ELEMENTARY CLASSROOMS OF MODERN SCHOOLS

(Classroom including cloakroom)

American flag	Compass, board	Phonograph needles
Aquarium	Crayons	Phonograph record case
Bands, rubber	Curtains	Phonograph records
Bell	Desks, adjustable	Pictures
Blotters	Dictionary, large	Plan book
Boards, drawing	Dictionary holder	Pointers
Books, reference	Drawing sets	Projectoscope
Books, supplementary	Erasers	Readers, supplement-
Books, text	Globe	tary
Bookcase	Holders, pin	Sandpaper
Boxes, plant	Inkwells	Sand table
Brushes, paint	Knives	Scissors
Bulletin board	Maps	Screen, projectoscope
Busts	Measures, set of	Sharpener, pencil
Cabinet, supply	Notebooks	Shades, window
Cabinet, filing	Pans, paint	Sponges
Cards, drill	Paper, writing	Stand, umbrella
Chair, teacher's	Paper, drawing	Table
Chairs, visitors'	Paper, manila	Tacks, thumb
Chairs, pupils	Paste	Telephone
Charcoal	Pens	Thermometer
Clips, paper	Pencils	Waste basket
Clock	Phonograph	Window stick

¹ For complete lists of equipment for the kindergarten, the manual training and household arts, and other special departments, the teacher will find it advantageous to consult the Strayer and Engelhardt Elementary School Inventory Book, C. F. Williams and Son, Inc., Albany, N. Y.

The teaching equipment of a rural school. — The rural school teacher will find the Holton and Strickland score card for teaching equipment, in the form which is found here, of great value in the determination of the needs of his school.¹ Five hundred points are considered a perfect score for teaching equipment. Any teacher in judging his own situation must become familiar with the standard details as shown here. In comparing his situation on any one item of the score card with the standards a teacher

TEACHING EQUIPMENT, PERFECT SCORE 500 POINTS

	<i>Perfect</i>		<i>Perfect</i>
I. GENERAL (300) —		II. SPECIAL (200) —	
A. Free textbooks. . . .	60	A. Primary (45):	
B. Maps, globe, charts	25	1. Sand table.	20
C. Bookcases.	20	2. Blocks, hand-work materials, sight cards	25
D. Display facilities. . . .	20	B. Household arts (65):	
E. Library (80):		1. Cooking (25):	
1. Selection.	20	a. Stove.	15
2. Grading.	10	b. Utensils.	10
3. Reference (20):		2. Warm lunch (15):	
a. Dictionaries.	10	a. Dishes.	10
b. Encyclopedia	10	b. Table.	5
4. Government and state bulletins	15	3. Cupboard.	10
5. Cur. literature.	15	4. Sewing facilities	15
F. Music (40):		C. Manual training (40):	
1. Instrument.	25	1. Tools.	25
2. Song books.	15	2. Benches.	15
G. Pictures and decorations.	25	D. Nature study material.	25
H. Industrial exhibits. . . .	15	E. Agriculture.	25
I. Weights and measures.	15	Total.	

¹ This score card with suggested standards may be obtained from Kansas Agricultural College, Manhattan, Kansas.

will find it possible to give a score to each subdivision of the score card. Any final score of less than 400 points ought to arouse a teacher to a distinct desire for betterment. The aim should be a score of 500 points for every school.

DETAILS AND STANDARDS OF THE TEACHING EQUIPMENT OF A
RURAL SCHOOL, AS SUGGESTED BY HOLTON AND STRICKLAND

I. GENERAL —

A. Free textbooks :

State adopted texts, good condition, sufficient to supply all pupils with attendance at maximum ; supplementary books for reading and other work ; copies of all texts for teacher's desk.

B. Maps, globes, charts :

Wall roller maps of world, continents, United States, state, and county, since last census ; 12 in. hanging globe ; reading charts for system used ; temporary charts.

C. Bookcases :

Built in or cabinet, inclosed, glass doors with lock ; special dictionary stand or holder.

D. Display facilities :

According to space and need, burlap surface (preferably green), yard wide, 3 ft. from floor ; wires above and below blackboard, a good improvised scheme ; glass cases or cabinets for collections.

E. Library :

1. Selection — should include suitable fiction, science, history, biography, and industrial, agricultural, and household arts literature.
2. Grading — children of primary, intermediate, and grammar departments well provided.
3. Reference :
 - a. Dictionary — unabridged, late edition ; also small dictionaries properly graded, one for each two pupils above the third grade.
 - b. Encyclopedias — pupils' encyclopedia, 4 to 6 volumes.

4. Government and state bulletins — suitable collection from United States Bureau of Agriculture, Weather Bureau, Bureau of Labor, Children's Bureau, Geological Surveys, Statistical Abstract of Census; departments of education, health, agriculture; state agricultural colleges.
5. Periodicals at least as follows: daily paper, weekly magazine dealing with current events, farm journal, children's paper.

F. Music:

1. Instrument — piano, organ, or victrola.
2. Books — good collection of standard songs with music, bound.

G. Pictures and decorations:

Few well-selected and tastefully framed reprints of masterpieces, natural decorations in season, special decorations by pupils, with evidence of suitable change.

H. Industrial exhibits:

Exhibits of manufactured products processes, *e.g.*, Baker's chocolate, Standard Oil products, Pillsbury flour (stages of manufacture), cotton manufacture, silk manufacture.

I. Weights and measures:

Liquid and dry measures; trip balance with English and metric weights.

II. SPECIAL —

A. Primary:

1. Sand table — 2 ft. high, minimum area of 6 sq. ft., sand-tight box with sides 4 in. high.
2. Materials — papers of all kinds, crayolas, water-color materials, clay, scissors, rulers, weaving materials, word builders, numbers, sight cards, sign-printing set, paste, hectograph, colored pegs, toothpicks, number blocks, collected material (*e.g.*, pasteboard boxes, spoons).

B. Household arts:

1. Cooking:

- a. Stove — oil stove and oven or kitchen stove or equivalent.

- b. Utensils — kettle, sauce and baking pans, strainer, kitchen knife, fork, and spoons, measuring cup, salt and pepper shakers, frying pan, dish pan, garbage can, butcher and paring knives, potato masher, quart cup, mixing bowl, plates, serving tray, tea towels, cleaning cloths, soap and scouring materials, food receptables.
2. Warm lunch:
 - a. Dishes — individual bowls, cups, saucers, plates, knives, forks, and spoons.
 - b. Table — suitable to be used for cooking as well; any suitable adaptation of other equipment.
3. Cupboard — dust proof, preferably glass doors, capacity for dishes, utensils and supplies.
4. Sewing — space usable for cutting; tape measures, shears, thimbles, needles; storage facilities for material.
- C. Manual training:
 1. Tools — cross-cut and rip saws, coping saw, jack plane, hatchet, block plane, try-square, framing square, carpenter's ruler, mortise gauge, hammer, screw drivers (4 and 8 in.), chisels ($\frac{1}{4}$, $\frac{1}{2}$, and 1 in.), ratchet brace, set of auger bits ($\frac{3}{16}$ to 1 in.), drawing knife, oil and carborundum stones, oil can, files (flat and saw), pliers, putty knife, anvil, 8 oz. ball hammer, 10 in. monkey wrench.
 2. Bench — substantial, minimum 2 ft. by 5 ft.; two vises (one metal, one wood faced), drawers for tools.
- D. Nature study materials:

Plant presses, insect jar (poison), jars, bottles, collections of plants, seeds, woods, flower pots, magnifying glasses (minimum, one for each five pupils).
- E. Agriculture:

Babcock tester with bottles, pipettes, and materials, unless there are a number in the homes of the community; seed testers for corn and other seeds; tubing and fixtures for capillarity experiments; litmus paper for soil tests.

High-grade school buildings for all children.—The attempt has been made in this chapter to indicate to teachers that it is possible for them to assume responsibilities in regard to the school plant and its equipment, which in the past have not been accepted by many classroom teachers. The teacher is held responsible for progress. The quality of work done depends frequently on the environment and the equipment. Modern school buildings that conform to acceptable standards give teachers and pupils who occupy them decided advantages over the teachers and pupils housed in old, poorly equipped schools. The tendency of Boards of Education to allow buildings to run down in one section of a community while extravagant sums are spent on new buildings in other sections does not create equal opportunities in education. Teachers may be expected to secure equipment and surroundings to the degree that they display their knowledge regarding the use of such equipment or to the degree in which they are able to prove their needs. A good workman keeps in touch with the developments in his field which affect his own product. A good teacher learns to know good schools and good equipment and talks and writes good schools and good equipment whenever opportunity offers. Only through such a continuous plan of education of the citizens of a community will the desired result be obtained.

QUESTIONS

1. Are the spaces underneath stairways in your building used as storage places? What dangers are involved in this practice?
2. With the aid of your class, outline a plan for the decoration of one of your corridors. Urge the children to visit other public build-

ings where acceptable decorative schemes have been followed in order to learn what has been done elsewhere. Have the plan accepted by the school and begin to carry it to fruition.

3. What plans can you suggest for interesting children in making homelike and attractive the interior of a classroom? Would a scrap-book made of interior decorations of homes as clipped from magazines help children in organizing ideas in this field? Are you systematically interesting your class in the appearance and decoration of the room?

4. When were the seats of your classroom last adjusted to the children?

5. Using the Strayer Building Score Card, score your entire building so that you may become familiar with every detail of the plant.

6. To how many square feet of floor space and cubic feet of air space are the children of your school entitled under the state law? Have the children of your room the allowances that are due them?

7. Is it possible with your present window shades to prevent annoying crosslights during the day? What kinds of shades will help solve your difficulties? What is the proper way to hang window shades?

8. Secure a list of the apparatus available in the storerooms of your building which you will find advantageous in your teaching.

9. Does the window area of your classroom meet the standard of 20 per cent of the floor area? If you have windows on two sides of the room, will the standard still be met if the shades on the windows at the end of the room are permanently drawn?

10. The standard number of square feet of playground area per child of school enrollment is one hundred for city schools. Does your school playground meet this standard? How much money will be needed to reach the standard? Will playground apparatus, like swings, giant strides, and seesaws, improve the present conditions?

11. If you are a rural school teacher, score your teaching equipment as well as your building on the Holton and Strickland Rural School Score Card.

12. If the seats in your classroom are non-adjustable and of one size only, what plan are you following for meeting the differences in heights of the children? Make a table of the heights of all the children. Suggest other plans which make the children more comfortable.

13. If neither the classroom nor the adjacent cloakroom has closets or cabinets for supplies and textbooks, can you suggest a plan to the janitor or the manual training department for providing the necessary equipment at a small cost?

14. A Director of Drawing in the schools of New York city makes, among others, the following suggestions for schoolroom decoration. Wherein do you not agree with these suggestions?

1. Doors and cabinet walls should not be used as bulletin boards.
2. Do not decorate the blackboard. It should be kept for the purpose it is intended for.
3. If you desire to display something on the classroom wall, do not stick it up anywhere; find a place for it.
4. Make the teacher's desk a model of good design in balanced decoration. Try always to have flowers on the desk.
5. Remember that the most effective method of teaching is by example. Have the room speak for itself.

15. Chalk dust is a classroom evil, the dangers of which must be reduced to a minimum. How can you fix chalk rails so that the erasers need not lie in the dust? What plans are utilized for cleaning erasers besides the unsanitary one of having children beat them together?

16. Study carefully all problems connected with the passing of your class at recess time, at closing time, and for fire drills. What other arrangements of the equipment of your room will provide readier egress? What obstructions to ready egress should be brought to the attention of the principal? In case of fire will your children be confronted by doors opening the wrong way? Can they walk directly out upon the fire escapes? How many possibilities of exit exist for your class?

REFERENCES FOR READING

- A Survey of the School System of St. Paul, Minn.
A Survey of the School System of Paterson, N. J.
Ayres, Williams, and Wood, Healthful Schools.
Dresslar, School Hygiene.

CHAPTER XV

THE TEACHER AND THE COMMUNITY

A GOOD teacher becomes a part of his community. — Teacher participation in community life is necessary for success in the teaching profession. Erroneous concepts have frequently been permitted to develop regarding the real place of the teacher in the community. The schoolhouse has in many places represented a world set apart from real life. The teacher has sometimes been led to believe that activity in the real world of other folks would result in a loss of dignity accompanied by too cordial relationships between teachers and pupils. It has even been intimated to some teachers that their chances of reelection would be impaired if they took an active part in community life. The selection of teaching as a life calling spells neither social nor community ostracism. The real success of a teacher's work is measured by the ability of the child to make his full contribution to the society in which he lives. The teacher thus requires as part of his equipment the most complete information concerning community needs and the most intimate understanding of community attitudes. Only frequent first-hand contacts will provide such equipment.

School life, to achieve its purpose, must be real life. Failure may often be accurately prophesied where the school world has been separated from all other child and

adult activity. Arithmetic taught just because the material is found within a textbook may not be the arithmetic which the community needs. The subsequent failure of the child and therefore of the school is the result. Before beginning teaching in any school system, the wise teacher will acquire the widest knowledge of his teaching problem. This advance information should be gleaned from community history, from city library, from school reports, and from mingling among the people themselves. It is pathetic to find teachers who have been engaged to teach in a school system arriving on the scene of action a few hours before school begins on the opening day of school. It is equally unfortunate to find teachers leaving the community each Friday as school closes and not returning until the hour before school reopens on Monday. Such teachers do not make the contribution to community life that teachers should find possible. The superintendent in the selection of his teaching staff chooses teachers whose enthusiasm, special equipment, social outlook, and broad vision will become community assets. The potential community leader has a greater probability of election than a candidate who does not qualify in this respect. The guidance and leadership which communities are seeking, and for which salaries are being paid, should not be denied them by teachers who agree to teach and yet do not learn to know the community well enough to know how to teach.

The isolated schoolhouse. — The schoolhouse standing alone in its isolation and aloofness from all community interests and activities may still be commonly found. Such a schoolhouse has a cold, forbidding appearance. It attracts neither child nor parent. Under compulsion,

the child goes to school in the morning and leaves with joy when school is over. It may be the only building in the neighborhood with a room large enough for an assembly. It may stand in the midst of lowly homes whose occupants are waiting to be led to higher standards of living. It may be the sole instrument available for transforming the district into a coöperative body working for their common interests. In spite of these opportunities and needs, the school continues to serve its owners but a few hours of the total number possible and in an educational field limited to classroom instruction.

It is clear that the teachers of this type of school have not properly conceived of their responsibilities even to the children whom they teach. The child who has had a lesson on the care of his teeth or the care of his body cannot sufficiently profit by such a lesson if the folks at home are opposed to any change in their methods or are reluctant to spend the small sum necessary to make the change. Instruction in home-making and in the preparation of foods does not function to its full one-hundred-per-cent possibility unless the mother in the home has been placed in the proper receptive attitude. The Americanization of the child of foreign parents is a long-drawn-out process when the parents insist on fostering old-country habits and customs in the home. The American school should become as much the school for the foreign parent as for the child of foreign parentage. In order that all school teaching may be made effective, the limits of the classroom will be the boundaries of the district; the pupils of the classroom will be all of the people of the district.

Community service.—There are many teachers in

America who have proved the possibility of serving all of the people through the schools. The reader will recall fellow workers whose teaching has been so inspirational, whose influence upon all phases of community life has been so widespread, that their praises have been sung long after their removal to other fields of activity.

The teacher who has found his school located in a foreign settlement of an American city and has seized the opportunity for the complete Americanization of that settlement has performed a task for which his community will ever owe him a debt of gratitude. Such teachers have been known to secure better streets, to clean up unsightly dumping grounds, to wipe out undesirable resorts, and to elevate the standard of the home. It has been found possible in such cases to make the school the annex of the home. Not only have the children been taught therein, but fed, clothed, and bathed when necessity demanded. The parents have been led from a dull monotonous drudgery to a real human existence. Children have seen their parents changed from house renters to home owners; they have had the privilege of discovering the virtues of soap and paint; they have been introduced to lawns and gardens, clean clothes and wholesome food. School teaching is thankless, unsatisfactory work when limited to the confines of a room twenty-four feet wide and thirty-two feet long. The teacher's vision of a community of model homes, of hard-working and contented parents, of children physically strong, mentally alert, and properly trained for service in industry and commerce will become a reality only as his leadership and coöperation bring it about.

Successful leadership. — The work of other teachers has lingered long in the memory of communities because of other achievements. In densely populated sections of an eastern city where playgrounds for children were lacking, a school teacher saw the possibilities of a community playground on property adjacent to his school. Ball fields, wading pools, skating rinks, sand piles, and other delightful playground opportunities might be furnished the unfortunate children of his large school, providing he secured them. After long years of hard work his dream came true. His park and playground have contributed beyond measure to the welfare and contentedness of his school district.

In other cities the leadership of the teacher may have been evidenced in a new branch library, a community orchestra, an annual school fair, or even a modern school building with provision for every kind of educational or social enterprise. The individual classroom teacher will find opportunities which will grant him a share in cementing the relationship between home and school. Kindergarten teachers in districts where the advantages of this early training are not appreciated may make their contributions by visiting homes, celebrating special fathers' and mothers' days at school, and by thus bringing into school five and six year old children who otherwise would lose a year of social contact. Where clothes are lacking for these children coöperation with the upper grade sewing classes will provide them. Persistent and insistent labor coupled with intelligent treatment of each case will help to relieve the cares of mothers, to reduce children's diseases, and to make easier for each child the transition from home

to school. The primary teacher may find opportunity for aiding in the home and school program by forming a Mothers' Club and proving to other teachers the advantages to be gained.

Keeping children in school. — The sixth grade teacher may be desirous of developing a continuous campaign against "dropping out" of school. Such a campaign will include a searching examination of every prospective case of withdrawal, conferences with the parents, and adjustment of the course of study to meet the child's needs. Every child on leaving school will thus be led to feel that the school has his interests at heart and is anxious to serve him that he may become a better and more capable citizen. These suggestions may appear commonplace, but these types of simple service form the basis for securing unity from the complex interrelationships that exist between school and home. A beginning must be made in every school district. Where the complete teaching staff has not begun to accept its charge the pioneer teacher must blaze the way.

A community problem for the entire faculty. — The faculty of a school may assume leadership in a community by uniting on a program of civic betterment. Their program may consist of the establishment of playgrounds, the addition of manual training or domestic arts courses, the opening of the school for adult evening activities, classes for citizenship, the creation of a "city beautiful," and other similar enterprises. When parents and citizens are given the opportunity for participating in these activities, the probabilities of success are enhanced.

The determination of the efficiency of the school as

the instrument of all classes of people is a splendid faculty project. The kind of study suggested in the following table will be enlightening. In your school district does the child of the common laborer get into high school in greater percentages than in the school system the data of which are given in the table? Has the child of your school not only the initial handicap of the home but also a handicap in lack of school care and control if he happens to be born in the laborer's home instead of the home of the professional man?

TABLE XXXIX

THE CHILDREN OF A SCHOOL DISTRICT IN A LARGE CITY DISTRIBUTED ACCORDING TO THEIR GRADE IN SCHOOL AND THE ECONOMIC STATUS OF THE FATHER

STATUS OF FATHER	COMMON LABORER	SEMI-SKILLED LABORER	SKILLED LABORER	CLERK OR SALESMAN	PROFESSIONAL OR BUSINESS MAN
I. High School	12 ¹	52	60	19	54
II. Eighth Grade	128	173	300	54	96
III. First Grade	789	321	448	133	126

Does not the school assume the burden of preparing the leaders for the society of to-morrow? Surely in a school district of the size indicated in Table XXXIX the percentage of leadership material among the common laborers is far greater than this school has recognized.

¹ Read: Twelve children from the homes of common laborers were attending high school; 128 were attending the eighth grade and 789 were attending the first grade from this school district during one school year.

That society may not be broken into conflicting strata, leadership must be made possible from any and all groups. If the school does not give the best and most extensive training possible to the intellectually capable, those children will, because of their ability and in spite of their faulty training, rise as leaders of social and economic groups which may be expected to be antagonistic to a social order whose advantages were denied them.

A constructive school program. — It is possible that many teachers have not as yet realized the part they have played in bringing on the hovering storm of social unrest. Tradition has held them rigidly to courses of study which have not had any close relationship with life. Children have been eliminated from school without rime or reason. Not ability to do life's task, not native intellect, but blind conformance to a traditional program has spelled success in schools. The result has been a gradually increasing mass of men and women who have weighed school opportunities and found them wanting. Unfair elimination from school, inadequate preparation for the tasks of life, and lack of guidance into callings for which their aptitudes fit them will cause righteous and unyielding grievance against the educational system of any community. The faculty which would know its school and its community problem must be making a continuous social and economic survey of its school district. All too many faculties think of the burdens of the current year only. In every school there should be the necessary comparative data¹ covering a period of years collected in such form as to permit any

¹ The Strayer-Engelhardt Elementary School Record Book will permit schools to keep such data over a period of ten years.

faculty to build thereon a constructive educational platform.

Parents informed on school policies. — Mothers' meetings have in many communities been the entering wedge in the attack on the school as an isolated institution. The program of such meetings, consisting of informal talks followed by refreshments served by the domestic science classes, leads to sociability and a desire for further knowledge concerning the policies and work of the school. The plan for a year may include monthly meetings and talks on such vital topics as the medical inspection program, the care of children, the establishment of wholesome standards of amusement, the high-school courses of study and their preparation for life, the social program of the school, and other topics of local interest. These meetings frequently attract those mothers who rarely find opportunities for other social mingling and relief from household drudgery. In this achievement alone, the teachers find their labor repaid. Such meetings are most profitably held after school hours on school days. Where it is possible to provide care for the younger children by turning the kindergarten into a nursery, the attendance of mothers is increased.

In planning mothers' meetings it must be borne in mind that many of the mothers have had only a limited amount of educational training and will therefore profit most by simple, concise talks with clearly discernible objectives. Changes in school method, in teacher attitude, and in the purposes of teaching may be explained in non-technical terms. Discussions should be invited. Educational and intelligence measurements, the achievements of pupils,

and the results of medical inspection are types of school problems, a knowledge of which will assist parents in appreciating more completely what is possible in the field of education. Simple graphs can be used in these explanations.

Mothers' meetings have been highly instrumental in transforming barren, uninviting schoolhouses into attractive educational homes for children. Dirt and accumulations of broken-down furniture have vanished, pictures and the piano have been provided, the child's interests have been discussed to the mutual advantage of teacher and mother, and for the formal, unforbidding atmosphere of the school building has been substituted a spirit of friendliness and joy in a common undertaking.

Exhibits of school work. — School exhibits afford means for informing parents and citizens of the work of the school. Only articles produced in regular school work as a part of the school program should be exhibited. Special articles produced at tremendous costs in pupil time and energy and with a maximum of teacher assistance are with wisdom withheld from such exhibits. It is better morals to exhibit only that which may be considered the usual product of the classroom. It is frequently found advantageous to secure a permanent exhibit station centrally located in the town or city so that a continuous series of exhibits may be planned. Changes may be made when desired.

The attention of the parents may be attracted to the school work and school needs by arranging for a repetition of the daily program in the evening when all parents can come. When made an annual event and combined with attractive entertainment features, the interest and aid of parents are easily enlisted.

Achievements of Parent-Teachers Associations. — From mothers' meetings have grown the more ambitious and all inclusive Parent-Teachers Associations which are thriving and helpful organizations in many cities. The broad aims that prompted the amalgamation of local chapters into a national Parent-Teachers organization, as set forth in their constitution, are :

- (a) Raising of the standards of home life.
- (b) Development of wiser, better-trained parenthood.
- (c) Giving young people, ignorant of the proper care and training of children, opportunities to learn, that they may better perform the duties of parenthood.
- (d) Bringing into closer relations the home and the school, that parent and teacher may coöperate intelligently in the education of the child.
- (e) Surrounding the childhood of the whole world with that loving, wise care in the impressionable years of life, that will develop good citizens, instead of lawbreakers and criminals.
- (f) Carrying the mother-love and mother-thought into all that concerns or touches childhood in home, school, church, or state.
- (g) Interesting men and women to coöperate in the work for purer, truer homes, in the belief that to accomplish the best results, men and women must work together.
- (h) Securing such legislation as will insure that children of tender years may not be tried in ordinary courts, but that each town shall establish juvenile courts and appoint special officers, whose business it shall be to look out for that care which will rescue the child from, instead of confirming him in, evil ways.

(i) Securing such probationary care in individual homes rather than institutions.

(j) Rousing the whole community to a sense of its duty and responsibility to dependent and neglected children, because there is no philanthropy which will so speedily reduce our taxes, reduce our prison expenses, reduce the expense of institutions for correction and reform.

The activities of Parent-Teachers organizations have produced splendid results. Circulating libraries have been established. Lunch rooms have been maintained, where at a minimum cost to the pupil warm, wholesome food might be obtained. Pure milk has been supplied to underfed children. First-aid cabinets complete with every facility for accident or emergency cases have been installed. Building additions, the need for which school visitation and discussion have made apparent, have been secured from boards of education. Unsanitary conditions in school buildings and grounds have been changed. The providing of resting rooms for teachers, the adornment of the school grounds, the purchase of musical instruments, the installation of sanitary drinking fountains, and the simplification of girls' school dresses are among the admirable results accomplished.

Community centers. — The need for extension of the kinds of organizations already mentioned into community centers in which the whole intellectual life of communities may be developed becomes evident as time passes. Democracy depends for its support and success upon universal education. Yet it has been pointed out that, in the United States, only 10 per cent of our adult population have had a high school education, while only 50 per cent

have ever completed the grammar grades.¹ The impression that when a child leaves the jurisdiction of the school system his education is complete, is a common fallacy that must be eradicated. The citizenry of America must set the example for the world by making education not only the chief aim of the first few years of their lives but during their entire allotted period of life. Evening schools, continuation schools, the community forum, neighborhood clubs, the coöperative exchange, and other kindred institutions are all spokes in the great wheel of which the school is the hub.

The measurement of community activities. — The Holton and Strickland Rural School Score Card includes, among its other features, that of measurement of the community activities in which the school engages. Two hundred points are allotted a school which has a perfect score in this respect. Any teacher may determine how many points of the two hundred points should be awarded his school by scoring against the perfect score on each item.

SCORE CARD FOR SPECIAL COMMUNITY ACTIVITIES OF A RURAL SCHOOL

PERFECT SCORE 200 POINTS

	<i>Perfect</i>		<i>Perfect</i>
I. CLUBS (60) —		B. Discussion club...	10
A. Girls.....	30	C. Social events.....	10
B. Boys.....	30	D. Community li-	
II. PROMOTION EXER-		brary.....	10
CISES.....	10	E. Community fair..	15
III. SCHOOL EXHIBIT OR		F. Athletic activities.	10
PATRONS' DAY....	20	V. FIELD MEET.....	20
IV. COMMUNITY CENTER (65) —		VI. SUPERVISED PLAY...	25
A. School improve-		Total.....	100
ment club.....	10		

¹ A Community Center, Jackson. Macmillan Co., N. Y., 1918.

Detailed standards for special community activities in a rural school.—Compare your own situation with these standards and score on the score card above.

I. CLUBS —

A. Girls' clubs:

For specific activities of educative nature, *e.g.*, camp fire, garden club, canning club.

B. Boys' clubs:

Same purpose as girls', *e.g.*, boy scouts, pig clubs, corn clubs.

II. PROMOTION EXERCISES —

Afternoon or evening special exercises in recognition of graduates of 8th grade.

III. SCHOOL EXHIBIT OR PATRONS' DAY —

Special display of work, with or without program for patrons.

IV. COMMUNITY ACTIVITIES —

A. School improvement club:

A coöperative organization of teachers and citizens to further the interests of the school.

B. Discussion club:

Literary society or club for discussion of problems of local or national importance.

C. Social events:

Use of school building for social dances or other approved social recreation.

D. Community library provision:

Provision for adult reading material and its use by citizens of district.

E. Community fair:

A day for competitive exhibits at school building of products of home industries.

F. Athletic activities:

Community field meet, commonly in connection with fair.

V. FIELD MEET —

Preliminaries and joint meet with other schools.

VI. SUPERVISED PLAY —

Organized play under student leadership, teacher merely source of inspiration and information.

A greater service with greater rewards. — The extension of a teacher's work to realms outside the classroom will make of him a busy person. It will require all his time for educational work and will not permit of other lucrative labors. The teaching profession in the United States is underpaid at present. It may be partially due to the fact that it has not made itself as indispensable as could be done. A broader conception of the teaching task coupled with a well-organized plan for community service will make the teacher a more valuable member of the community. No community being offered such an extended service will desire to retrogress. The salary may be expected to grow with the service rendered.

One of the greatest hindrances to the development of schools and the extension of educational service has been the saloon with its companion evils. The gregarious instinct in man which made him seek the saloon for companionship must be satisfied through other community clubs. A splendid opportunity is here offered the schools. The prospect for those in education has never been brighter than it is to-day. Better parentage, in a physical and social sense, cleaner, brighter homes, children better provided for, and communities better governed and offering a maximum of opportunities to all may be expected by teachers as the net result of the struggle through which society passed in the years 1914-19.

QUESTIONS

1. In group discussion with the teachers of your school ascertain what community interests can be best advanced through teacher activity.

2. Why are the children of your school leaving as soon as the law permits? Can you ascertain the real reasons for these withdrawals? Can the school course of study or its attitude toward children be considered as causes of withdrawals?

3. What other contribution does your school make to community welfare beyond the mere instruction in the subjects of the classroom?

4. What assurance have you that the teaching of the household sciences in your school functions in the homes of the children?

5. Arrange a year's program for mothers' meetings which will attract mothers and will keep them informed of the policies and achievements of the school.

6. In Jackson's "A Community Center"¹ suggestions are given for organizing the interests of a community for the welfare of all. What advantages would your community gain if these suggestions were put into effect?

7. The school system of Paterson, N. J., was instrumental in issuing an arithmetic covering the problems in silk manufacturing, as that is Paterson's greatest industry. Can a somewhat similar task be performed by you and your class in your community?

8. Endeavor to analyze the success that other teachers have made or are making in your school system. What part of that success is apparently due to active participation in community life?

9. What particular knowledge and training that teachers possess make them desirable, active members of committees working for the advancement of the social, industrial, and commercial interests of a community?

10. Outline the community problems which you, as an individual, may help to solve. In which field are you prepared to make the greatest contribution? Endeavor to develop a plan of action which you can follow toward this end.

¹ Macmillan Co., N. Y., 1918.

11. What facts concerning parents and children is it desirable for your school to know for any contemplated change in the course of study?

12. What problems must be met in the formation of a parent-teachers' association in your school?

13. What particular needs of your school would receive attention if the parents were informed regarding them?

14. What will an analysis of the opportunities for further education and for attractive social intercourse provided the mothers of your school children bring to light?

15. What advantages will be offered the men of your school district to offset those which they felt were centered in the saloon? Has your school any obligation in this problem?

REFERENCES FOR READING

Bennett, School Efficiency.

Cubberley, Changing Conceptions of Education.

Dewey, School and Society.

O'Shea, Social Development of Education.

CHAPTER XVI

THE REALIZATION OF PROFESSIONAL AIMS

THE development of a more efficient system of public education is the aim of every professional teacher.

In the first chapter there were presented some of the more important problems confronting the American public in the field of education. In this chapter it is our purpose to discuss the measures to be employed by teachers in the establishment of a school system which will serve our democratic society to best advantage. It may not be out of place to suggest that in the teaching profession, as with other professional groups, the question of admission to the profession is one that should receive our careful attention.

Preparation of teachers. — We cannot hope to establish a satisfactory school system in the United States until there is acknowledged everywhere the need for at least a minimum of four years of high school work beyond the elementary school, and of a two years' professional course for those who would enter the teaching profession. If we ever reach the place where sufficient rewards are available for teachers, we must demand an even more extensive and significant training. To provide adequate training for teachers would require a four years' professional course beyond graduation from the four years' high school course; and this four year professional training should be provided

for teachers not only in the high schools, but for those who are to work with younger children. There is no greater fallacy than that involved in the supposition that those who work with young children need little education. The subject-matter of the primary grades of the elementary school is extensive if one is to command it in such a way as to give the very best service in this part of the school system. It is quite as difficult to master the literature of childhood, the nature study available for the lower grades, and the work in industrial and household arts which should be presented to children in the primary grades, as it is to become a specialist in the two or three subjects taught by a high school teacher. The special knowledge of children and of the technique of teaching demanded of a lower grade teacher is as difficult of mastery as that which is required of those who teach older boys and girls.

There are a surprisingly large number of teachers in the United States who have recognized this need, and who have spent even their meagre income in securing the additional training necessary for work in that part of the school system in which they are employed. The situation will be very much improved when the more extended period of training for teachers is organized so as to prepare those who are to teach in the lower grades, in the intermediate grades, in the junior high school, and in the senior high school. This differentiation in training, and the recognition of the skill shown in any part of the school system, can be brought to pass if those of us who belong to the profession will constantly work for the realization of this purpose.

School equipment. — Teachers must work not only for a better professional training for those who would enter

the profession, but also for the improvement of the conditions of work, especially as they have to do with providing greater opportunities for children. It is true, of course, that a teacher is very much handicapped if books and supplies are not available. It is hard to conceive of a teacher who would not be willing to work for the establishment of the principle of free textbooks and supplies for all children. Many teachers have done much for the local situation in which they work by securing, through the efforts of children and by the generosity of school patrons, classroom or school libraries which are invaluable in the hands of a skillful teacher.

School buildings. — Aside from the equipment of books and materials which are necessary in the teaching of courses of study, teachers should be keenly alive to the gain which comes from providing adequate physical surroundings for school children. A well-constructed, properly heated and ventilated, sanitary school building presents possibilities of professional work that are almost impossible of realization in an old, unsanitary, ill-ventilated, poorly lighted fire trap such as may be found in a great many school systems. The kind of blackboards that are available, the toilet facilities provided, the care of the building by janitors, all have a very definite effect upon the work which teachers seek to accomplish.

Play and physical education. — All teachers who know the significance of play will work for the establishment of playgrounds, gymnasiums, and other facilities so necessary for the physical welfare and recreation of boys and girls. These play facilities should, of course, be made available not only during school hours but during the whole of the day and in

the evening for the older people of the community, as well as on holidays and during vacation periods. In like manner, the opportunities for study in the school building, outside of the regular school hours, will be sought by teachers who realize how little can be accomplished by children whose home surroundings are such as to interfere with the formation of right habits of study.

Tenure, salaries, and pensions. — Teachers have always been concerned with the problems of tenure, of salary, and of pensions. They must continue to work for improved conditions in these respects until very much higher standards are reached than have yet been attained. There will, of course, be the charge that they are seeking, for selfish reasons, to advance their own interests. The answer which must be given is that the opportunity afforded in the profession will determine the type of men and women who will enter it. It may very well be claimed that security of tenure, a living salary, and the protection against poverty in old age, or on account of other disability, are the only bases upon which the community can hope to secure an adequate teaching force. Teachers, in advocating that such measures be taken, are in a real sense serving the community.¹

Educational legislation. — Legislation for education is proposed at practically every session of every state legislature in the United States. Teachers need to have clearly in mind types of legislation which make for efficiency and to support such measures in the legislature. They need

¹ Consult Teachers' Salaries and Salary Schedules in the United States, 1918-19, by E. S. Evenden, published by National Education Association, Washington, D. C.

to know, as well, of the other type of legislation introduced for the sake of serving some personal interest or of returning the schools to political control. Wide-awake teachers will be found supporting provisions to raise the compulsory school age and to make effective the administration of the compulsory school law. Those who have had sufficient professional training to understand the significance of the reform suggested will support legislation which seeks to enlarge the unit of administration outside of cities from the district to the township or from the township to the county. Teachers who see beyond their local communities will always favor legislation which seeks to distribute state funds in such a way as to provide for an actual equalization of educational opportunity. Measures which seek to eliminate children from industry, and to prolong the period of education laws which look in the direction of providing adequate physical examination and health service for school children, will receive the hearty support of all members of the profession. It would be possible, of course, to list very many other measures which will from time to time be brought before our lawmaking bodies and concerning which teachers should be active.

Recognition of classroom teachers. — There is need in our profession for the development of a different attitude toward the classroom teacher and for a recognition of skill in this field which will enable one to find a career in teaching. As the situation is at present, there is a tendency to promote every very successful teacher to a supervisory or administrative post. Our whole professional group might very well seek to provide superior opportunities for superior teachers, and to give them a recognition which would make

the calling of a teacher quite as dignified as that of those who have the responsibility for organizing and administering education. There will, of necessity, have to be larger rewards for these teachers and some special recognition in the form of place and title. It is not too much to expect that superior teachers might be given the task of working on the development of courses of study. For this purpose a teacher who had shown unusual skill might have as much as a whole year to put in form the results of his own experience and of his observations of the work of other teachers. In larger schools teachers of superior attainment might very properly be relieved from regular class work from time to time in order that they might help in the development of greater skill by beginning teachers. This has been done sometimes in American school systems by calling the teacher a training teacher, and by sending beginning teachers for a period of apprenticeship into the class of these superior teachers.

In some school systems special funds have been provided which enable teachers of unusual ability to continue their professional study by going to professional schools at the expense of the school system. This type of recognition is especially desirable when the teacher is given an opportunity to share his experience with others upon his return. With the development of this attitude which gives recognition to teachers, one might expect that special investigations or inquiries, and unusual experimental work would be undertaken by capable teachers, and that the rewards offered to these members of the profession would approach in amount that which is commonly paid to the members of the supervisory and administrative staff.

The organization of teachers. — In order to accomplish the purposes which professional teachers have in mind, there is the necessity for organization which will bring to the board of education and to the community at large the well-developed professional advice and point of view of all members of the teaching corps. The need for organization is apparent not only locally, but in the state and in the nation. If our profession is to have the effect it ought to have upon public education in the United States, it will be necessary to organize ourselves for the realization of our professional aims.

With more than six hundred thousand teachers in the United States it is manifestly impossible to assemble the group for the discussion of the problems which confront all of us. In the states in which teachers' organizations have been most effective, the plan of organization is roughly as follows: The state is divided into several districts, and from each district delegates are elected to a central state body. This representative body carries forward the program which is the program of all of the teachers of the state. The supposition lying back of this organization is, of course, that teachers in the various sections of the state will choose as their representatives those who stand for the professional aims common to the group. This supposition seems to be justified by the experience of teachers in states that have developed this type of state association. In like manner, if we are to accomplish the results which are necessary in the nation, we will have to organize a representative body, which should be composed of delegates elected from each of the states. This working body will consider the needs of each state or section of the country in the light of the

whole situation, and will be able from time to time to advocate such measures and to secure support from state and district associations which will mean recognition that cannot be attained in any other way. It is as necessary for teachers to be organized for the sake of realizing their professional aims as it is for any other of the groups that we recognize as powerful to have organized themselves for the sake of securing improvement in their own practice, or legislation which looks to the development of the field of work in which they are engaged.

Participation of teachers in community activities. — In advocating the development of professional consciousness and of an organization which will seek to raise the standard of professional skill upon the part of all of the members of the teaching profession, one must not lose sight of the fact that the teacher is a member of the larger community group. It is doubtful whether teachers may ever hope to secure the recognition which they desire or the opportunity for service which they seek, except as they enter into the common life and are recognized as workers for the common good, even outside of their professional activity. One has just the same right to expect a teacher to be active in community enterprises as the doctor, the lawyer, or the business man. With the establishment of the teaching profession upon a sound basis in training, and with the recognition of teaching as a career, there will develop a corresponding opportunity for recognition and service in dealing with the larger issues before the community. One may very well question whether any teacher is ever quite efficient except as he has relationships outside of his own profession that put him in touch with the other agencies making for the

common good and the activities of other professional or business groups which explain at the same time the environment from which his pupils come and the occupations into which they will go. Capable teachers make as good members of city clubs, chambers of commerce, social welfare organizations, and the like, as do those drafted from any other social group.

Realizing professional aims. — The realization of one's aims as a teacher is dependent, in large measure, upon the growth that one seeks constantly to attain. When teaching becomes a drudgery, any professional ideal that one may have held is likely to disappear. The teacher who attacks his problems from day to day in a truly professional spirit, one who is willing to experiment, one who is never satisfied with the skill already attained, may be reasonably confident of his own professional growth and development. It is not possible in teaching, any more than it is in any other calling, to stand still. One is either going ahead toward the realization of a higher ideal, or he is slipping back into a dreary routine of inefficiency. Contact with boys and girls, with limitless possibilities represented in their lives for the welfare of society, offers a most important stimulus. Contact with one's fellow teachers, especially those who are themselves working earnestly for self-improvement and for the development of a better system of public education, will provide another necessary association making for professional growth. The greatest reward that the teacher will ever receive will be in the satisfaction that comes from service rendered unselfishly for the common good.

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